# STIC Search Report
## Biotech-Chem Library

STIC Database Tracking Number: 168039

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|---|---|
| **TO: Ben Sackey**<br>**Location: 5b31 / 5c18**<br>**Art Unit: 1626**<br>**Thursday, October 13, 2005**<br><br>**Case Serial Number: 10/611539** | **From: Noble Jarrell**<br>**Location: Biotech-Chem Library**<br>**Rem 1B71**<br>**Phone: 272-2556**<br><br>**Noble.jarrell@uspto.gov** |

## Search Notes

Access DB# 168089

# SEARCH REQUEST FORM

**Scientific and Technical Information Center**

Requester's Full Name: BEN SACKEY Examiner #: 73489 Date: 10/7/05
Art Unit: 1626 Phone Number 30-2-0705 Serial Number: 10/611,539
Mail Box and Bldg/Room Location: REM 5B31 Results Format Preferred (circle): PAPER DISK E-MAIL

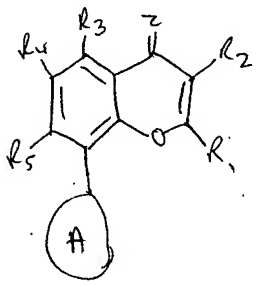
**If more than one search is submitted, please prioritize searches in order of need.**
**********

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

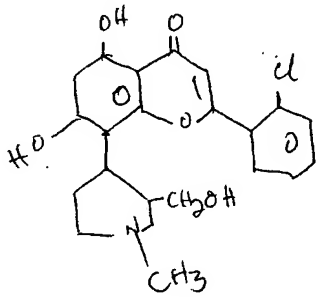
Title of Invention: Inhibitors of Cyclin Dependent kinases & their uses
Inventors (please provide full names): Fry et al.

Earliest Priority Filing Date: 7/19/02.

***For Sequence Searches Only*** *Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*




Substituents are as defined in claim 1, this case has been restricted and the Elected compd is Example 11, which is ((+)-trans-2-(2-Chlorophenyl)-5,7-dihydroxymethyl-1-methyl pyrrolidin-3-yl) Chromen-4-one




Thanks

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| STAFF USE ONLY | Type of Search | | Vendors and cost where applicable |
|---|---|---|---|
| Searcher: Nikki | NA Sequence (#) | | STN |
| Searcher Phone #: | AA Sequence (#) | | Dialog |
| Searcher Location: | Structure (#) | 3 | Questel/Orbit |
| Date Searcher Picked Up: 10/13/05 | Bibliographic | ✓ | Dr.Link |
| Date Completed: 10/13/05 | Litigation | | Lexis/Nexis |
| Searcher Prep & Review Time: 20 | Fulltext | | Sequence Systems |
| Clerical Prep Time: | Patent Family | | WWW/Internet |
| Online Time: 58 | Other | | Other (specify) |

PTO-1590 (8-01)

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     (FILE 'HOME' ENTERED AT 11:06:49 ON 13 OCT 2005)

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L1            1 US2004106581/PN OR (US2003-611539# OR US2002-397326#)/AP,PRN
L2            1 IN2002-MU616#/AP,PRN
L3            1 L1-2

     FILE 'REGISTRY' ENTERED AT 11:09:17 ON 13 OCT 2005

     FILE 'HCAPLUS' ENTERED AT 11:09:26 ON 13 OCT 2005
L4              TRA L3 1- RN :      189 TERMS

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L5          189 SEA L4

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L6            1 L3

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FILE LAST UPDATED: 12 Oct 2005  (20051012/ED)

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L3   ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2005 ACS on STN
AN   2004:41203  HCAPLUS
DN   140:111277
ED   Entered STN:  18 Jan 2004
TI   Preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent
     kinases.
IN   Lal, Bansi; Joshi, Kalpana Sanjay; Kulkarni, Sanjeev Anant; Mascarenhas,
     Malcolm; Kamble, Shrikant Gangadhar; Rathos, Maggie Joyce; Joshi,
     Rajendrakumar Dinanath
PA   Nicholas Piramal India Limited, India
SO   PCT Int. Appl., 186 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
IC   ICM  A61K
CC   27-14 (Heterocyclic Compounds (One Hetero Atom))
     Section cross-reference(s): 1, 5, 63
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
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| | | | | | |
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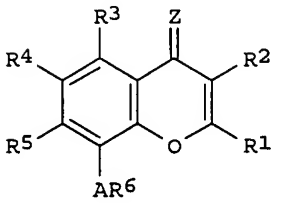
| PI | WO 2004004632 | A2 | 20040115 | WO 2003-IN234 | 20030707 <-- |
| | WO 2004004632 | A3 | 20040916 | | |
| | WO 2004004632 | C1 | 20050324 | | |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| | US 2004106581 | A1 | 20040603 | US 2003-611539 | 20030701 <-- |
| | CA 2492130 | AA | 20040115 | CA 2003-2492130 | 20030707 <-- |
| | BR 2003012633 | A | 20050719 | BR 2003-12633 | 20030707 <-- |
| | EP 1556375 | A2 | 20050727 | EP 2003-753911 | 20030707 <-- |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| PRAI | IN 2002-MU616 | A | 20020708 <-- | | |
| | US 2002-397326P | P | 20020719 <-- | | |
| | WO 2003-IN234 | W | 20030707 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---|---|---|
| WO 2004004632 | ICM | A61K |
| WO 2004004632 | ECLA | C07D405/04+311C+207; C07D405/04+311C+211; C07D405/14+311C+233+207 <-- |
| US 2004106581 | NCL | 514/100.000 |
| | ECLA | C07D405/04+311C+207; C07D405/04+311C+211; C07D405/14+311C+233+207 <-- |
| BR 2003012633 | ECLA | C07D405/04+311C+207; C07D405/04+311C+211; C07D405/14+311C+233+207 <-- |
| EP 1556375 | ECLA | C07D405/04+311C+207; C07D405/04+311C+211; C07D405/14+311C+233+207 <-- |

OS MARPAT 140:111277

GI




I

AB Title compds. [I; R1 = (substituted) aryl, (unsatd.) heterocyclyl, NR9R10, OR11, SR11; R2 = H, alkyl, (substituted) aryl, (unsatd.) heterocyclyl, OR11, halo, cyano, NO2, NR9R10, SR11; R3-R5 = H, alkyl, halo, OR11, aralkoxy, alkylcarbonyloxy, CO2H, NR9R10, SR11, aralkylthio, alkylsulfonyl, arylsulfonyl, SO2NR9R10, aryl, (unsubstituted) heterocyclyl, etc.; R6 = alkyleneOR11; R8 = H, alkyl, aryl, carboxamide, sulfonamide, NR9R10, OR11; R9, R10 = H, alkyl, aryl, alkanoyl, heterocyclyl, etc.; NR9R10 = (unsatd.) (substituted) heterocyclyl; R11 = H, alkyl, alkanoyl, (substituted) aryl; Z = O, S, NR8; A = 5-7 membered ring], were prepared Thus, trans-2-(2-chloro-5-fluorophenyl)-5,7-dihydroxy-8-(2-hydroxymethyl-1-methylpyrrolidin-3-yl)chromen-4-one (preparation given) inhibited HeLa cervix cell proliferation with IC50 = 0.01-1 μM.

ST pyrrolidinylchromenone prepn cyclin dependent kinase inhibitor; anticancer antifungal antiviral parasiticide insecticide chromenone pyrrolidinyl prepn

IT Cyclins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(D1, inhibitors; preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT Cyclins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(E, inhibitors; preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT Disease, animal
(degenerative, treatment; preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT Agriculture and Agricultural chemistry
Antitumor agents
Fungicides
Human
Insecticides
Parasiticides
(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT Disease, animal
(proliferative, treatment; preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT Antiviral agents
Kidney, disease
Mycosis
Neoplasm
Skin, disease
(treatment; preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT Infection
(viral, treatment; preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT 141349-86-2, Cyclin dependent kinase-2 147014-97-9, Cyclin dependent kinase-4 150428-23-2, Cyclin-dependent kinase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitors; preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT 647019-53-2P 647019-54-3P 647019-55-4P 647019-56-5P 647019-57-6P
647019-58-7P 647019-59-8P 647019-60-1P 647019-61-2P 647019-62-3P
647019-63-4P 647019-64-5P 647019-65-6P 647019-66-7P 647019-67-8P
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647019-78-1P 647019-79-2P 647019-81-6P 647019-82-7P 647019-84-9P
647019-85-0P 647019-86-1P 647019-87-2P 647019-88-3P 647019-89-4P
647019-90-7P 647019-91-8P 647019-92-9P 647019-93-0P 647019-94-1P
647019-95-2P 647019-96-3P 647019-97-4P 647019-98-5P 647019-99-6P
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647020-15-3P 647020-16-4P 647020-17-5P 647020-18-6P 647020-19-7P
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647020-35-7P 647020-36-8P 647020-37-9P 647020-38-0P 647020-39-1P
647020-40-4P 647020-41-5P 647020-42-6P 647020-43-7P 647020-44-8P
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647020-56-2P 647020-57-3P 647020-58-4P
RL: AGR (Agricultural use); BSU (Biological study, unclassified); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT 647020-75-5P 647020-76-6P 647020-77-7P 647020-78-8P 647020-80-2P
647020-81-3P 647020-82-4P 647020-83-5P 647020-84-6P 647020-85-7P
647020-86-8P 647020-87-9P 647020-88-0P 647020-89-1P 647020-90-4P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT 117955-09-6P
RL: PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT 62-23-7, 4-Nitrobenzoic acid 88-65-3, 2-Bromobenzoic acid 93-58-3, Methyl benzoate 99-60-5, 2-Chloro-4-nitrobenzoic acid 104-94-9, 4-Methoxyaniline 106-94-5, n-Propyl bromide 118-91-2, 2-Chlorobenzoic acid 394-35-4, Methyl 2-fluorobenzoate 455-68-5, Methyl 3-fluorobenzoate 606-45-1, 2-Methoxybenzoic acid methyl ester 610-94-6, Methyl 2-bromobenzoate 610-96-8, Methyl 2-chlorobenzoate 610-97-9, Methyl 2-iodobenzoate 619-42-1, Methyl 4-bromobenzoate 621-23-8, 1,3,5-Trimethoxybenzene 785-56-8, 3,5-Bis(trifluoromethyl)benzoyl chloride 1129-35-7, Methyl 4-cyanobenzoate 1445-73-4, 1-Methyl-4-piperidone 2810-04-0, Thiophene-2-carboxylic acid ethyl ester 2905-65-9, Methyl 3-chlorobenzoate 2942-59-8, 2-Chloro-3-pyridinecarboxylic acid 2967-66-0, Methyl 4-trifluoromethylbenzoate 16220-95-4, Methyl 2-chloro-5-methylbenzoate 18063-02-0, 2,6-Difluoro-1-benzoyl chloride 27007-53-0, Methyl 2-Bromo-5-chlorobenzoate 86393-34-2, 2,4-Dichloro-5-fluorobenzoyl chloride 220389-17-3, Ethyl 2-methyl-4-cyanobenzoate 647020-69-7 647020-70-0, Methyl 2-Chloro-3-fluorobenzoate 647020-71-1, Methyl 2-bromo-3-fluorobenzoate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT 943-14-6P, 2-Bromo-5-nitrobenzoic acid 2516-96-3P, 2-Chloro-5-nitrobenzoic acid 6307-82-0P, 2-Chloro-5-nitrobenzoic acid methyl ester 6942-37-6P, 5-Amino-2-bromobenzoic acid methyl ester 13296-94-1P, 2-Bromo-4-nitroaniline 13324-11-3P, 2-Chloro-4-nitrobenzoic acid methyl ester 16426-64-5P, 2-Bromo-4-nitrobenzoic acid 34662-35-6P, 2-Bromo-4-nitrobenzonitrile 35450-36-3P, 2-Bromo-5-methoxybenzoic acid methyl ester 42122-75-8P, 5-Amino-2-chlorobenzoic acid methyl ester 46004-37-9P, 4-Amino-2-chlorobenzoic acid methyl ester 54810-63-8P, 2-Chloro-5-methoxybenzoic acid methyl ester 74317-85-4P, 2-Bromo-4-methoxybenzoic acid 94635-24-2P, 1-(4-Methoxyphenyl)-4-piperidone 98592-34-8P, 2-Chloro-4-cyanobenzoic acid methyl ester 104253-44-3P, 2-Chloro-4-hydroxybenzoic acid methyl ester 104253-45-4P, 2-Chloro-4-methoxybenzoic acid methyl ester 113225-07-3P 113225-08-4P 137548-16-4P, 2-Chloro-5-dimethylaminobenzoic acid methyl ester 154607-00-8P, 2-Bromo-5-hydroxybenzoic acid methyl ester 185312-82-7P, 4-Bromo-2-chlorobenzoic acid methyl ester 217458-79-2P 247092-10-0P, 2-Chloro-5-hydroxybenzoic acid methyl ester 647020-59-5P 647020-60-8P 647020-61-9P 647020-62-0P 647020-63-1P, 2-Chloro-5-fluorobenzoic acid methyl ester 647020-64-2P 647020-65-3P, 1-(4-Methoxyphenyl)-4-(2,4,6-trimethoxyphenyl)-1,2,3,6-tetrahydropyridine 647020-66-4P 647020-67-5P 647020-68-6P 647020-72-2P 647020-73-3P 647020-74-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

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'BIX BI,ABEX' IS DEFAULT SEARCH FIELD FOR 'WPIX' FILE

L6 ANSWER 1 OF 1 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2004-203390 [19] WPIX
DNC C2004-080068
TI New benzopyranone derivatives are cyclin dependent kinase inhibitors, useful the treatment or prevention of proliferative disorders e.g. mycotic infections and viral infections.
DC B02 C02
IN JOSHI, K; JOSHI, R; KAMBLE, S; KULKARNI, S; LAL, B; MASCARENHAS, M; RATHOS, M J; JOSHI, K S; JOSHI, R D; KAMBLE, S G; KULKARNI, S A
PA (NICH-N) NICHOLAS PIRAMAL INDIA LTD; (PIRA-N) PIRAMAL INDIA LTD NICHOLAS; (JOSH-I) JOSHI K; (JOSH-I) JOSHI R; (KAMB-I) KAMBLE S; (KULK-I) KULKARNI S; (LALB-I) LAL B; (MASC-I) MASCARENHAS M; (RATH-I) RATHOS M J
CYC 106
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US 2004106581 A1 20040603 (200436) A61K031-541 <--
AU 2003272070 A1 20040123 (200459) A61K000-00
KR 2005017110 A 20050221 (200544) C07D405-04
IN 2002000616 I3 20050304 (200547) EN A61K031-44
BR 2003012633 A 20050519 (200549) C07D405-04
EP 1556375 A2 20050727 (200549) EN C07D405-04
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ADT WO 2004004632 A2 WO 2003-IN234 20030707; US 2004106581 A1 **Provisional US 2002-397326P 20020719, US 2003-611539 20030701**; AU 2003272070 A1 AU 2003-272070 20030707; KR 2005017110 A KR 2005-700401 20050108; IN 2002000616 I3 **IN 2002-MU616 20020708**; BR 2003012633 A BR 2003-12633 20030707, WO 2003-IN234 20030707; EP 1556375 A2 EP 2003-753911 20030707, WO 2003-IN234 20030707
FDT AU 2003272070 A1 Based on WO 2004004632; BR 2003012633 A Based on WO 2004004632; EP 1556375 A2 Based on WO 2004004632
PRAI **IN 2002-MU616 20020708**
IC ICM A61K000-00; A61K031-44; A61K031-541; C07D405-04
ICS A61K031-353; A61K031-4025; A61K031-4178; A61K031-422; A61K031-427; A61K031-452; A61K031-496; A61K031-5377; A61K031-665; A61P035-00; C07D405-02; C07D405-14

AB WO2004004632 A UPAB: 20040318
NOVELTY - Benzopyranone derivatives (Ic) and their prodrug, tautomeric form, stereo isomer, optical isomer, pharmaceutically acceptable salt, pharmaceutically acceptable solvate or polymorphs are new.

DETAILED DESCRIPTION - Benzopyranone derivatives of formula (Ic) and their prodrug, tautomeric form, stereoisomer, optical isomer, pharmaceutically acceptable salt, pharmaceutically acceptable solvate or polymorphs are new.

R1 = aryl (optionally substituted with T) optionally saturated or 1-4C heterocycle having hetero atoms of N, O, S or P (optionally substituted with T), NR9R10, OR11 or SR11;

R2 = H, 1-6C alkyl, aryl (optionally substituted with T), optionally saturated or 1-4C heterocycle having heteroatoms of N, O, S or P (optionally substituted with T), OR11, halo, CN, NO2, NR9R10 or SR11;

R3, R4, R5 = H, 1-6C-alkyl, halo, OR11, aryl1-4C-alkoxy, 1-4C-alkylcarbonyloxy, 1-4C-alkoxycarbonyloxy, arylcarbonyloxy, carboxy, CN, NO2 NR9R10, SR11, aryl-1-4C-alkylthio, SO2-1-4C-alkyl, SO2-aryl, SO2NR9R10, aryl and 1-4C heterocycle identical or different heteroatoms of N, O, S or P;

R6 = 1-4C-alkyleneOR11;

Z = O, S or NR8;

A = 5-7 membered ring; and

T = halo, 1-4C alkyl, 1-4c alkoxy, 2-6C alkenyl, 3-6C alkynyl, 2-4C alkanoyl, NO2, NR9R10, SR-11, CF3, hydroxyl, CN, carboxy, 1-4C alkoxy carbonyl or 1-4C alkylenehydroxyl.

INDEPENDENT CLAIMS also included for

(1) benzopyranone derivatives of formula (Ig);

(2) preparation of (Ic) or (Ig).

(3) preparation of benzopyranone derivatives of formula (XIIIA), (XXXIA) and (XXXVII); and

(4) resolution of anisole derivatives of formula (VIIIA).

R1 = aryl (optionally substituted with T) optionally saturated or 1-4C heterocycle having hetero atoms of N, O, S or P (optionally substituted with T), NR9R10, OR11 or SR11;

R2 = H, 1-6C alkyl, aryl (optionally substituted with T), optionally saturated or 1-4C heterocycle having heteroatoms of N, O, S or P (optionally substituted with T), OR11, halo, CN, NO2, NR9R10 or SR11;

R3, R4, R5 = H, 1-6C-alkyl, halo, OR11, aryl1-4C-alkoxy, 1-4C-alkylcarbonyloxy, 1-4C-alkoxycarbonyloxy, arylcarbonyloxy, carboxy, CN, NO2 NR9R10, SR11, aryl-1-4C-alkylthio, SO2-1-4C-alkyl, SO2-aryl, SO2NR9R10, aryl and 1-4C heterocycle identical or different heteroatoms of N, O, S or P;

R6 = 1-4C-alkyleneOR11;

Z = O, S or NR8;

A = 5-7 membered ring;

T = halo, 1-4C alkyl, 1-4c alkoxy, 2-6C alkenyl, 3-6C alkynyl, 2-4C alkanoyl, NO2, NR9R10, SR-11, CF3, hydroxyl, CN, carboxy, 1-4C alkoxy carbonyl or 1-4C alkylenehydroxyl; and

R13 = H, 1-6C-alkyl, (optionally substituted with halo, OH, carboxyl, 1-4C-alkoxy, amino, NO2, 1-4C-alkylthio, sulfhydryl or sulfonyl), 2-6C-alkenyl (optionally substituted with halo, OH, carboxyl, 1-4C-alkoxy, NH2, NH2, 1-4C-alkylthio, sulfhydryl, sulfonyl) aryl (optionally substituted with T, OH, 1-4C-alkoxy, 1-4C-alkylcarbonyl, CN, SO2R10, CO-(CH2)m-R14).

Full definitions are given in the DEFINITIONS (Full Definitions) field.

ACTIVITY - Cytostatic; Nephrotropic; Insecticide; Virucide; Antiparasitic; Antimicrobial; Dermatological.

(+)-trans-2-(2-Bromo-phenyl)-5,7-dihydroxy-8-(2-hydroxymethyl-1-methyl-pyrrolidin-3-yl)-chromen-4-one (I'c) was assessed for its inhibitory action using in vitro cell proliferation assay in human cancerous cell lines (PC-3 Prostate (a), H-460 Lung (b), MDA-MB-231 Breast (c), MCF-7 Breast (d), HeLa Cervix (e) and U-937 Histiocytic Lymphoma (f) (monocytes)).

The median inhibitory concentration values of (I'c) for (a)-(f) were 0.1-1, 0.5-1, 1-10, 0.1, greater than 10 and 0.1-1, respectively.

MECHANISM OF ACTION - Cyclin dependent kinase inhibitor
USE - Compounds (Ic)/(Ig) are useful in the manufacture of a medicament for the inhibition of cyclin-dependent kinases, for the treatment or prevention of proliferative disorders associated with de-differentiation of a differentiated cell population in a mammal, for the treatment or prevention of disorders associated with excessive cell proliferation, cancer, degenerative disorders, mycotic infections, viral infections, parasitic diseases, dermatological disorders or nephrological disorders, and as an insecticide or in agricultural applications. (claimed)
ADVANTAGE - Compounds (Ic)/(Ig) have enhanced selectivity and low cytotoxicity.
Dwg.0/0

FS CPI
FA AB; GI; DCN
MC CPI: B05-B01E; B06-A01; B07-H; B14-A02; B14-A04; B14-B02; B14-B04B; B14-D06; B14-H01; B14-N10; B14-N17; C05-B01E; C06-A01; C07-H; C14-A02; C14-A04; C14-B02; C14-B04B; C14-D06; C14-H01; C14-N10; C14-N17

=> b home
FILE 'HOME' ENTERED AT 11:10:19 ON 13 OCT 2005

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=> d his

     (FILE 'HOME' ENTERED AT 11:06:49 ON 13 OCT 2005)

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L2             1 IN2002-MU616#/AP,PRN
L3             1 L1-2

     FILE 'REGISTRY' ENTERED AT 11:09:17 ON 13 OCT 2005

     FILE 'HCAPLUS' ENTERED AT 11:09:26 ON 13 OCT 2005
L4               TRA L3 1- RN :      189 TERMS

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L5           189 SEA L4

     FILE 'WPIX' ENTERED AT 11:09:30 ON 13 OCT 2005
L6             1 L3

     FILE 'REGISTRY' ENTERED AT 11:30:40 ON 13 OCT 2005
L7           118 L5 AND OC5-C6/ES
L8               STR
L9            19 L8
L10         1179 L8 FULL
                 SAV TEM L10 SAC539F0/A
L11              STR L8
L12           38 L11 SAM SUB=L10
L13          893 L11 FUL SUB=L10
                 SAV TEM SAC539S0/A L13
L14          118 L13 AND L5

     FILE 'HCAPLUS' ENTERED AT 11:45:21 ON 13 OCT 2005
L15            1 L14
L16         1948 L13
                 E LAL B/AU
L17          181 E3-9
                 E LAL BAN/AU
L18           98 E6-7
                 E JOSHI K/AU
L19          391 E3-18,E22-24
                 E KULKARNI S/AU
L20         1438 E3-20
                 E KULKARNI SAN/AU
L21            5 E13-16
                 E MASCARENHAS M/AU
L22            7 E3-7
                 E MASCARENHAS MALCOLM/AU
L23            1 E3
                 E KAMBLE S/AU
L24           24 E3-12,E15
                 E RATHOS M/AU
L25            2 E4-5
                 E JOSHI R/AU
L26          532 E3-18,E32-34,E36
                 E NICHOLAS/CS,PA
L27         1652 E3-4
                 E NICHOLAS PIRAMAL/CS,PA
L28            8 E3-13
L29            2 L15-16 AND L17-28
L30         1946 L16 NOT L29

     FILE 'REGISTRY' ENTERED AT 11:51:32 ON 13 OCT 2005
L31         3416 CYCLIN DEPENDENT KINASE?/CNS

     FILE 'HCAPLUS' ENTERED AT 11:51:59 ON 13 OCT 2005
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                E CYCLIN DEPEND/CT
                E E5+ALL
L32         11365 CYCLIN DEPENDENT KINASE INHIBITORS+NT/CT
                E CYCLIN DEPEND/CT
                E E29+ALL
                E E2+ALL
L33          5876 CYCLIN-DEPENDENT PROTEIN KINASE+NT/CT
L34          9069 L31
L35           188 L30 AND L32-34
L36           181 L35 AND INHIBIT?
L37            49 L32 AND L30
L38         12784 L32,L34 (L)(INHIBIT? OR SUPPRESS? OR BLOCK? OR ANTAGON? OR REDU
L39           156 L38 AND L30
L40               QUE PY<=2002 OR AY<=2002 OR PRY<=2002 OR PD<=20020708 OR AD<=20

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L41               STR L11
L42             8 L41 SAM SUB=L13
L43               STR L41
L44             0 L43 SAM SUB=L13
L45               STR L43
L46             0 L45 SAM SUB=L13
L47             5 L45 FULL SUB=L13
                  SAV TEM L47 SAC539S1/A

     FILE 'REGISTRY' ENTERED AT 15:36:11 ON 13 OCT 2005
L48           888 L13 NOT L47

     FILE 'REGISTRY' ENTERED AT 15:43:36 ON 13 OCT 2005
L49           183 L48 AND (NC4 OR N2C3 OR NOC3 OR NSC3 OR SC4 OR S2C3 OR SNC3 OR
L50           796 OSC3/ES
L51             0 L50 AND L48
L52            14 (NCNC2 OR NCOC2 OR NCSC2 OR OCOC2 OR NCOC2 OR OCSC2 OR SCSC2 OR
L53           195 L49,L52
L54           113 L53 AND L5
L55            82 L53 NOT L54
L56               STR L11
L57             8 L56 SAM SUB=L53
L58           111 L56 FULL SUB=L53

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L59             2 L47
L60            14 L58
L61             1 L59-60 AND L1-3
L62             1 L59-60 AND L17-28
L63            14 L59-60 NOT L61-62
L64             1 L61-62

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L65             0 L47,L58

     FILE 'USPATFULL, USPAT2' ENTERED AT 16:00:25 ON 13 OCT 2005
L66             3 L65

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FILE 'REGISTRY' ENTERED AT 16:01:34 ON 13 OCT 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   12 OCT 2005  HIGHEST RN 865114-63-2
DICTIONARY FILE UPDATES:  12 OCT 2005  HIGHEST RN 865114-63-2
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New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

**********
* *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
* *
**********

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=> d que sta l47
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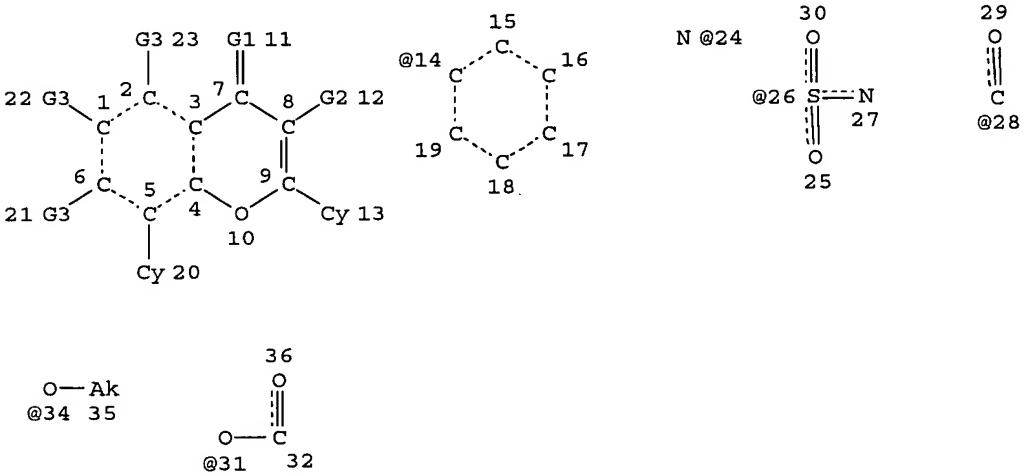


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VAR G2=H/AK/14
VAR G3=H/AK/X/31/24/26/28/CN/NO2/OH/34
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NSPEC IS RC AT 24
NSPEC IS RC AT 27
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 35

STEREO ATTRIBUTES: NONE
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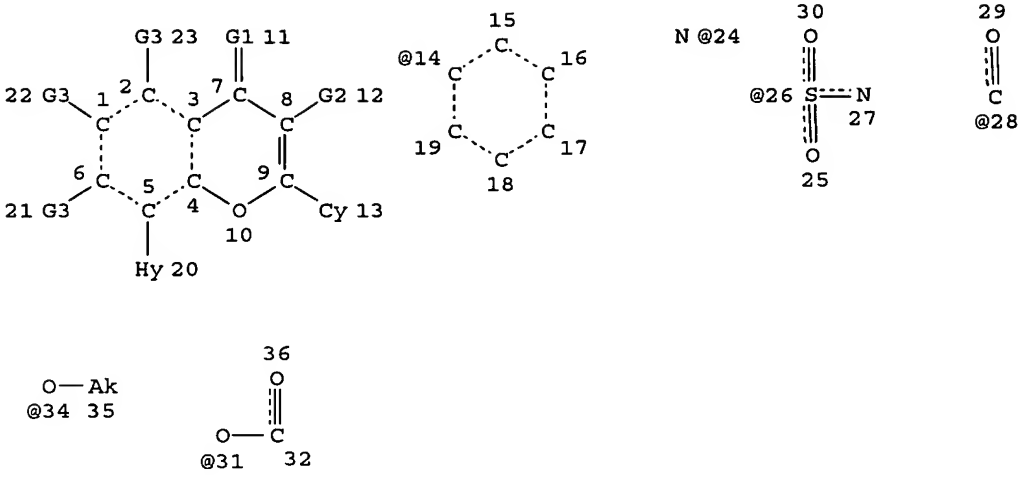
L11 STR



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VAR G2=H/AK/14
VAR G3=H/AK/X/31/24/26/28/CN/NO2/OH/34
NODE ATTRIBUTES:
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NSPEC IS RC AT 27
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 35

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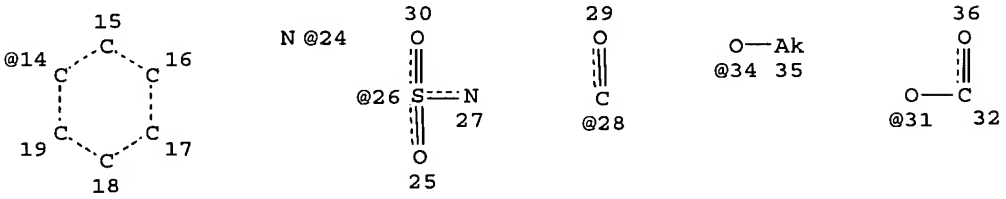
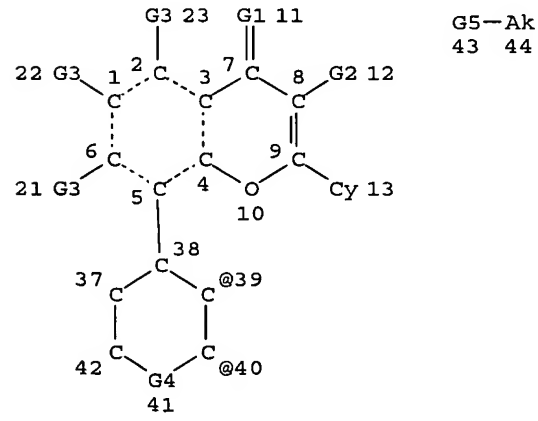




VAR G1=O/S

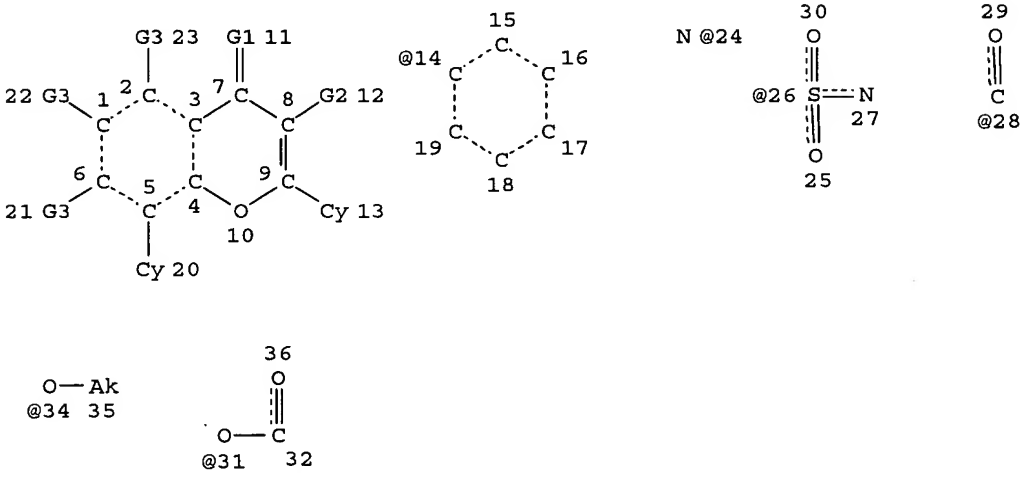
VAR G2=H/AK/14
VAR G3=H/AK/X/31/24/26/28/CN/NO2/OH/34
VAR G4=O/N/S
VAR G5=39/40
NODE ATTRIBUTES:
NSPEC IS RC AT 24
NSPEC IS RC AT 27
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 42

STEREO ATTRIBUTES: NONE
L47 5 SEA FILE=REGISTRY SUB=L13 SSS FUL L45

100.0% PROCESSED 884 ITERATIONS 5 ANSWERS
SEARCH TIME: 00.00.01

=> d que sta l58
L8 STR




VAR G1=O/S
VAR G2=H/AK/14
VAR G3=H/AK/X/31/24/26/28/CN/NO2/OH/34
NODE ATTRIBUTES:
NSPEC IS RC AT 24
NSPEC IS RC AT 27
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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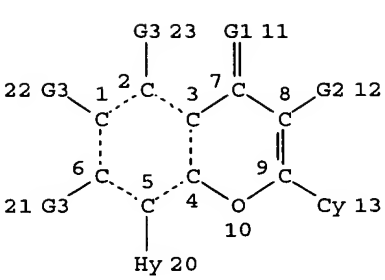
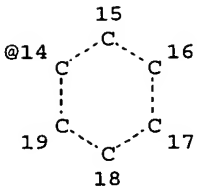
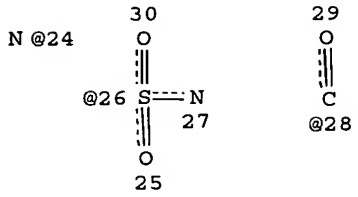
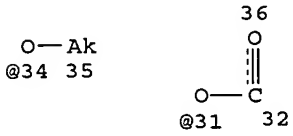
L11 STR




VAR G1=O/S
VAR G2=H/AK/14
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NODE ATTRIBUTES:
NSPEC IS RC AT 24
NSPEC IS RC AT 27
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 35

STEREO ATTRIBUTES: NONE
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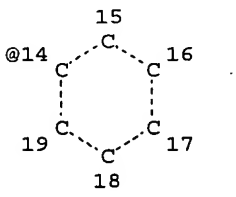
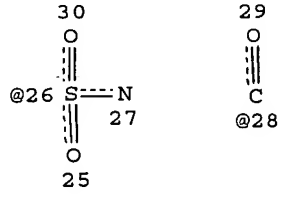
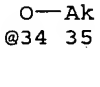
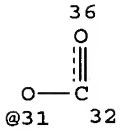
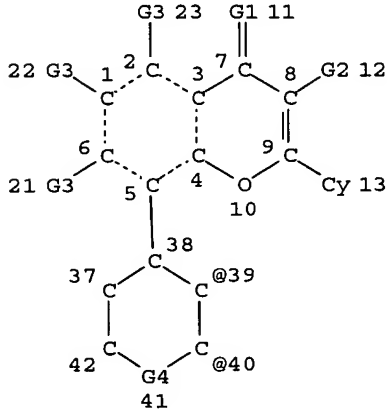
L45 STR



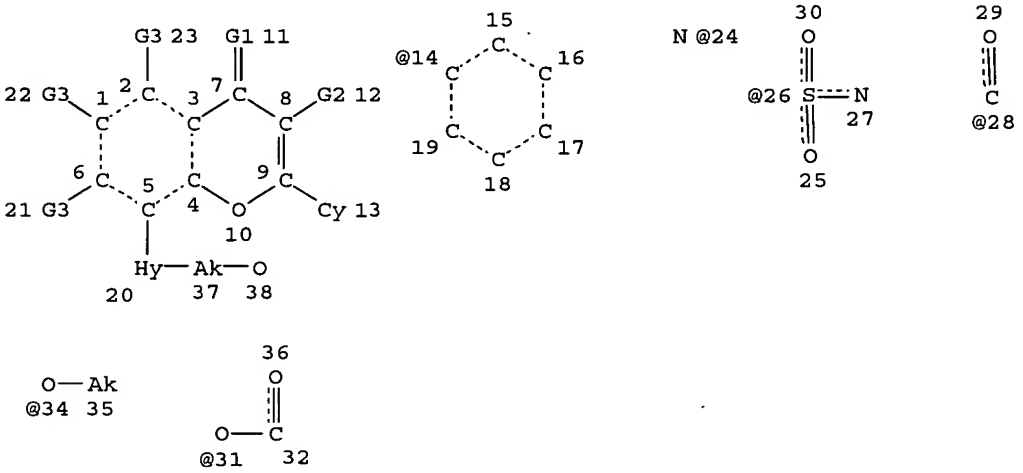




G5—Ak
43 44

VAR G1=O/S
VAR G2=H/AK/14
VAR G3=H/AK/X/31/24/26/28/CN/NO2/OH/34
VAR G4=O/N/S
VAR G5=39/40
NODE ATTRIBUTES:
NSPEC IS RC AT 24
NSPEC IS RC AT 27
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 42

STEREO ATTRIBUTES: NONE
L47 5 SEA FILE=REGISTRY SUB=L13 SSS FUL L45
L48 888 SEA FILE=REGISTRY ABB=ON PLU=ON L13 NOT L47
L49 183 SEA FILE=REGISTRY ABB=ON PLU=ON L48 AND (NC4 OR N2C3 OR NOC3 OR NSC3 OR SC4 OR S2C3 OR SNC3 OR SOC3 OR OC4 OR O2C3 OR NOC3 OR OSC3)/ES
L52 14 SEA FILE=REGISTRY ABB=ON PLU=ON (NCNC2 OR NCOC2 OR NCSC2 OR OCOC2 OR NCOC2 OR OCSC2 OR SCSC2 OR NCSC2 OR OCSC2)/ES AND L48
L53 195 SEA FILE=REGISTRY ABB=ON PLU=ON (L49 OR L52)
L56 STR

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NODE ATTRIBUTES:
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NUMBER OF NODES IS 37

STEREO ATTRIBUTES: NONE
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100.0% PROCESSED 186 ITERATIONS 111 ANSWERS
SEARCH TIME: 00.00.01

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=> b hcap
FILE 'HCAPLUS' ENTERED AT 16:01:49 ON 13 OCT 2005
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FILE COVERS 1907 - 13 Oct 2005  VOL 143 ISS 16
FILE LAST UPDATED: 12 Oct 2005  (20051012/ED)

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 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> d all fhitstr l64 tot

L64  ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2005 ACS on STN
AN   2004:41203  HCAPLUS
DN   140:111277
ED   Entered STN:  18 Jan 2004
TI   Preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent
     kinases.
IN   Lal, Bansi; Joshi, Kalpana Sanjay; Kulkarni,
     Sanjeev Anant; Mascarenhas, Malcolm; Kamble, Shrikant
     Gangadhar; Rathos, Maggie Joyce; Joshi, Rajendrakumar
     Dinanath
PA   Nicholas Piramal India Limited, India
SO   PCT Int. Appl., 186 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
IC   ICM  A61K
CC   27-14 (Heterocyclic Compounds (One Hetero Atom))
     Section cross-reference(s): 1, 5, 63
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     --------------      ----   --------    --------------------    --------
PI   WO 2004004632        A2    20040115    WO 2003-IN234           20030707 <--
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     WO 2004004632        C1    20050324
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             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
             PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,
             TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
             KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
             FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
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     US 2004106581        A1    20040603    US 2003-611539          20030701 <--
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     BR 2003012633        A     20050719    BR 2003-12633           20030707 <--
     EP 1556375           A2    20050727    EP 2003-753911          20030707 <--
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PRAI IN 2002-MU616 A 20020708 <--
US 2002-397326P P 20020719 <--
WO 2003-IN234 W 20030707

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES | |
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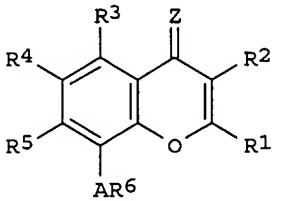
| WO 2004004632 | ICM | A61K | |
| WO 2004004632 | ECLA | C07D405/04+311C+207; C07D405/04+311C+211; C07D405/14+311C+233+207 | <-- |
| US 2004106581 | NCL | 514/100.000 | |
| | ECLA | C07D405/04+311C+207; C07D405/04+311C+211; C07D405/14+311C+233+207 | <-- |
| BR 2003012633 | ECLA | C07D405/04+311C+207; C07D405/04+311C+211; C07D405/14+311C+233+207 | <-- |
| EP 1556375 | ECLA | C07D405/04+311C+207; C07D405/04+311C+211; C07D405/14+311C+233+207 | <-- |

OS MARPAT 140:111277

GI




I

AB Title compds. [I; R1 = (substituted) aryl, (unsatd.) heterocyclyl, NR9R10, OR11, SR11; R2 = H, alkyl, (substituted) aryl, (unsatd.) heterocyclyl, OR11, halo, cyano, NO2, NR9R10, SR11; R3-R5 = H, alkyl, halo, OR11, aralkoxy, alkylcarbonyloxy, CO2H, NR9R10, SR11, aralkylthio, alkylsulfonyl, arylsulfonyl, SO2NR9R10, aryl, (unsubstituted) heterocyclyl, etc.; R6 = alkyleneOR11; R8 = H, alkyl, aryl, carboxamide, sulfonamide, NR9R10, OR11; R9, R10 = H, alkyl, aryl, alkanoyl, heterocyclyl, etc.; NR9R10 = (unsatd.) (substituted) heterocyclyl; R11 = H, alkyl, alkanoyl, (substituted) aryl; Z = O, S, NR8; A = 5-7 membered ring], were prepared Thus, trans-2-(2-chloro-5-fluorophenyl)-5,7-dihydroxy-8-(2-hydroxymethyl-1-methylpyrrolidin-3-yl)chromen-4-one (preparation given) inhibited HeLa cervix cell proliferation with IC50 = 0.01-1 μM.

ST pyrrolidinylchromenone prepn cyclin dependent kinase inhibitor; anticancer antifungal antiviral parasiticide insecticide chromenone pyrrolidinyl prepn

IT Cyclins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(D1, inhibitors; preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT Cyclins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(E, inhibitors; preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT Disease, animal
(degenerative, treatment; preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT Agriculture and Agricultural chemistry
Antitumor agents
Fungicides
Human
Insecticides
Parasiticides
(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent

kinases)
IT Disease, animal
(proliferative, treatment; preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)
IT Antiviral agents
Kidney, disease
Mycosis
Neoplasm
Skin, disease
(treatment; preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)
IT Infection
(viral, treatment; preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)
IT 141349-86-2, Cyclin dependent kinase-2 147014-97-9, Cyclin dependent kinase-4 150428-23-2, Cyclin-dependent kinase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitors; preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)
IT 647019-53-2P 647019-54-3P 647019-55-4P
647019-56-5P 647019-57-6P 647019-58-7P
647019-59-8P 647019-60-1P 647019-61-2P
647019-62-3P 647019-63-4P 647019-64-5P
647019-65-6P 647019-66-7P 647019-67-8P
647019-68-9P 647019-69-0P 647019-70-3P
647019-71-4P 647019-72-5P 647019-73-6P
647019-74-7P 647019-75-8P 647019-76-9P
647019-77-0P 647019-78-1P 647019-79-2P
647019-81-6P 647019-82-7P 647019-84-9P
647019-85-0P 647019-86-1P 647019-87-2P
647019-88-3P 647019-89-4P 647019-90-7P
647019-91-8P 647019-92-9P 647019-93-0P
647019-94-1P 647019-95-2P 647019-96-3P
647019-97-4P 647019-98-5P 647019-99-6P
647020-00-6P 647020-01-7P 647020-02-8P
647020-03-9P 647020-04-0P 647020-05-1P
647020-06-2P 647020-07-3P 647020-08-4P
647020-09-5P 647020-10-8P 647020-11-9P 647020-12-0P
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647020-30-2P 647020-31-3P 647020-32-4P
647020-33-5P 647020-34-6P 647020-35-7P
647020-36-8P 647020-37-9P 647020-38-0P
647020-39-1P 647020-40-4P 647020-41-5P
647020-42-6P 647020-43-7P 647020-44-8P
647020-46-0P 647020-47-1P 647020-48-2P
647020-49-3P 647020-50-6P 647020-51-7P
647020-52-8P 647020-53-9P 647020-54-0P
647020-55-1P 647020-56-2P 647020-57-3P
647020-58-4P
RL: AGR (Agricultural use); BSU (Biological study, unclassified); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)
IT 647020-75-5P 647020-76-6P 647020-77-7P
647020-78-8P 647020-80-2P 647020-81-3P
647020-82-4P 647020-83-5P 647020-84-6P 647020-85-7P
647020-86-8P 647020-87-9P 647020-88-0P 647020-89-1P
647020-90-4P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT 117955-09-6P
RL: PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT 62-23-7, 4-Nitrobenzoic acid 88-65-3, 2-Bromobenzoic acid 93-58-3, Methyl benzoate 99-60-5, 2-Chloro-4-nitrobenzoic acid 104-94-9, 4-Methoxyaniline 106-94-5, n-Propyl bromide 118-91-2, 2-Chlorobenzoic acid 394-35-4, Methyl 2-fluorobenzoate 455-68-5, Methyl 3-fluorobenzoate 606-45-1, 2-Methoxybenzoic acid methyl ester 610-94-6, Methyl 2-bromobenzoate 610-96-8, Methyl 2-chlorobenzoate 610-97-9, Methyl 2-iodobenzoate 619-42-1, Methyl 4-bromobenzoate 621-23-8, 1,3,5-Trimethoxybenzene 785-56-8, 3,5-Bis(trifluoromethyl)benzoyl chloride 1129-35-7, Methyl 4-cyanobenzoate 1445-73-4, 1-Methyl-4-piperidone 2810-04-0, Thiophene-2-carboxylic acid ethyl ester 2905-65-9, Methyl 3-chlorobenzoate 2942-59-8, 2-Chloro-3-pyridinecarboxylic acid 2967-66-0, Methyl 4-trifluoromethylbenzoate 16220-95-4, Methyl 2-chloro-5-methylbenzoate 18063-02-0, 2,6-Difluoro-1-benzoyl chloride 27007-53-0, Methyl 2-Bromo-5-chlorobenzoate 86393-34-2, 2,4-Dichloro-5-fluorobenzoyl chloride 220389-17-3, Ethyl 2-methyl-4-cyanobenzoate 647020-69-7 647020-70-0, Methyl 2-Chloro-3-fluorobenzoate 647020-71-1, Methyl 2-bromo-3-fluorobenzoate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

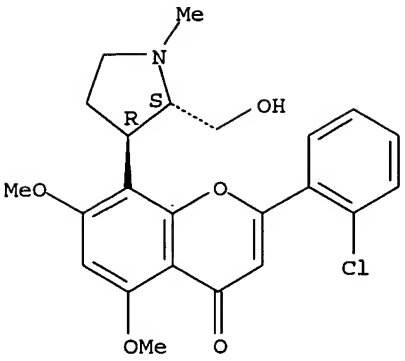
IT 943-14-6P, 2-Bromo-5-nitrobenzoic acid 2516-96-3P, 2-Chloro-5-nitrobenzoic acid 6307-82-0P, 2-Chloro-5-nitrobenzoic acid methyl ester 6942-37-6P, 5-Amino-2-bromobenzoic acid methyl ester 13296-94-1P, 2-Bromo-4-nitroaniline 13324-11-3P, 2-Chloro-4-nitrobenzoic acid methyl ester 16426-64-5P, 2-Bromo-4-nitrobenzoic acid 34662-35-6P, 2-Bromo-4-nitrobenzonitrile 35450-36-3P, 2-Bromo-5-methoxybenzoic acid methyl ester 42122-75-8P, 5-Amino-2-chlorobenzoic acid methyl ester 46004-37-9P, 4-Amino-2-chlorobenzoic acid methyl ester 54810-63-8P, 2-Chloro-5-methoxybenzoic acid methyl ester 74317-85-4P, 2-Bromo-4-methoxybenzoic acid 94635-24-2P, 1-(4-Methoxyphenyl)-4-piperidone 98592-34-8P, 2-Chloro-4-cyanobenzoic acid methyl ester 104253-44-3P, 2-Chloro-4-hydroxybenzoic acid methyl ester 104253-45-4P, 2-Chloro-4-methoxybenzoic acid methyl ester 113225-07-3P 113225-08-4P 137548-16-4P, 2-Chloro-5-dimethylaminobenzoic acid methyl ester 154607-00-8P, 2-Bromo-5-hydroxybenzoic acid methyl ester 185312-82-7P, 4-Bromo-2-chlorobenzoic acid methyl ester 217458-79-2P 247092-10-0P, 2-Chloro-5-hydroxybenzoic acid methyl ester 647020-59-5P 647020-60-8P 647020-61-9P 647020-62-0P 647020-63-1P, 2-Chloro-5-fluorobenzoic acid methyl ester 647020-64-2P 647020-65-3P, 1-(4-Methoxyphenyl)-4-(2,4,6-trimethoxyphenyl)-1,2,3,6-tetrahydropyridine 647020-66-4P 647020-67-5P 647020-68-6P 647020-72-2P 647020-73-3P 647020-74-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

IT **647019-53-2P**
RL: AGR (Agricultural use); BSU (Biological study, unclassified); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

RN 647019-53-2 HCAPLUS

CN 4H-1-Benzopyran-4-one, 2-(2-chlorophenyl)-8-[(2R,3S)-2-(hydroxymethyl)-1-methyl-3-pyrrolidinyl]-5,7-dimethoxy-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

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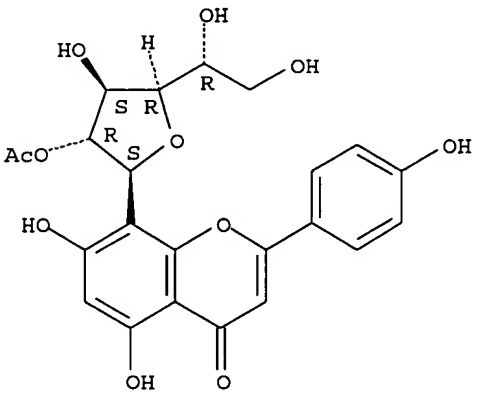
L63 ANSWER 1 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:297263 HCAPLUS
DN 139:348048
ED Entered STN: 17 Apr 2003
TI C-glucoside flavonoids from the leaves of Crataegus pinnatifida Bge. var. major N.E.Br.
AU Zhang, Pei-Cheng; Xu, Sui-Xu
CS Inst. Materia Med., Peking Union Med. College, Chinese Acad. Med. Sci., Beijing, 100050, Peop. Rep. China
SO Journal of Asian Natural Products Research (2003), 5(2), 131-136
CODEN: JANRFI; ISSN: 1028-6020
PB Taylor & Francis Ltd.
DT Journal
LA English
CC 11-1 (Plant Biochemistry)
AB Two new acetyl C-glucoside flavonoids, 8-C-β-d-(2''-O-acetyl)glucofuranosylapigenin and 3''-O-acetylvitexin, along with 4 known C-glucoside flavonoids, vitexin, 6''-O-acetylvitexin, 2''-O-acetylvitexin, and 2''-O-rhamnosylvitexin were isolated from the leaves of Crataegus pinnatifida Bge. var. major N.E.Br. Their structures were elucidated by spectroscopic means and chemical evidence.
ST C glucoside flavonoid Crataegus
IT New natural products
(8-C-β-d-(2''-O-acetyl)glucofuranosylapigenin and 3''-O-acetylvitexin (C-glucoside flavonoids))
IT Crataegus pinnatifida
(C-glucoside flavonoids from the leaves of Crataegus pinnatifida)
IT Flavonoids
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(C-glucoside flavonoids from the leaves of Crataegus pinnatifida)
IT Molecular structure, natural product
(of 8-C-β-d-(2''-O-acetyl)glucofuranosylapigenin and 3''-O-acetylvitexin (C-glucoside flavonoids))
IT 3681-93-4, Vitexin 64820-99-1, 2''-O-Rhamnosylvitexin 156790-77-1, 6''-O-Acetylvitexin 264142-91-8
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(C-glucoside flavonoids from the leaves of Crataegus pinnatifida)
IT **439692-84-9** 439692-86-1
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(new C-glucoside flavonoids from the leaves of Crataegus pinnatifida)
RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Ammon, H; Planta Med 1981, V43, P209 HCAPLUS

(2) Chen, H; J Chin Mater Med 1994, V19(8), P454 MEDLINE
(3) Dauguet, J; Phytochemistry 1993, V33(6), P1503 HCAPLUS
(4) Fang, Y; Chin Trad Herbal Drugs 1982, V13(5), P26 HCAPLUS
(5) Kashnikova, M; Khim Prir Soedin 1984, V1, P108
(6) Lin, L; J Chin Pharm University 1999, V30(1), P21 HCAPLUS
(7) Nikolov, N; Planta Med 1982, V44, P50 HCAPLUS
(8) Yang, L; Chin Trad Herbal Drugs 1993, V24(9), P482
(9) Zhang, P; J Asian Nat Prod Res 2001, V3(1), P77 HCAPLUS
(10) Zhang, P; Phytochemistry 2001, V57, P1249 HCAPLUS
IT 439692-84-9
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(new C-glucoside flavonoids from the leaves of Crataegus pinnatifida)
RN 439692-84-9 HCAPLUS
CN 4H-1-Benzopyran-4-one, 8-(2-O-acetyl-β-D-glucofuranosyl)-5,7-dihydroxy-2-(4-hydroxyphenyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



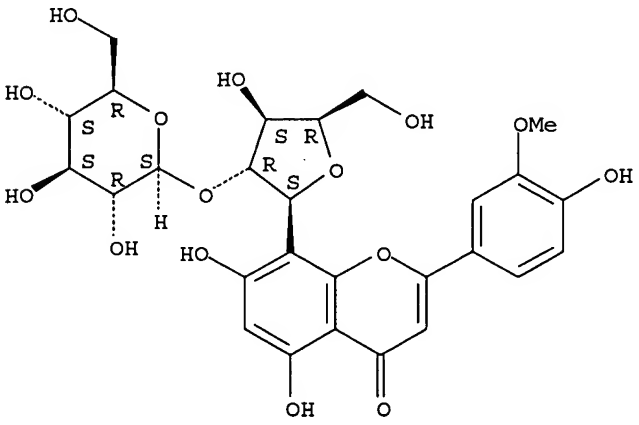

L63 ANSWER 2 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:881393 HCAPLUS
DN 138:119880
ED Entered STN: 21 Nov 2002
TI Phenolic and flavone C-glycosides from Scleranthus uncinatus
AU Yayli, Nurettin; Baltaci, Cemalettin; Genc, Hasan; Terzioglu, Salih
CS Faculty of Science, Department of Chemistry, Karadeniz Technical University, Trabzon, Turk.
SO Pharmaceutical Biology (Lisse, Netherlands) (2002), 40(5), 369-373
CODEN: PHBIFC; ISSN: 1388-0209
PB Swets & Zeitlinger B.V.
DT Journal
LA English
CC 11-1 (Plant Biochemistry)
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB From the whole parts of Scleranthus uncinatus, a new flavone C-glycoside, 5,7,4'-trihydroxy-3'-methoxyflavone-8-C-β-xylofuranoside-2"-O-glucoside (I), and a maltol phenolic glycoside, 2-methyl-3-O-{2'-[β-D-glucoside-(1''' → 3")-β-D-glucoside]-propionyloxy-4'-methoxyphenyl}-4-pyrone (II), were isolated for the first time from the S. uncinatus. The structures of I and II were deduced by high field 1D and 2D 400 MHz NMR and (+) FAB-MS spectra.
ST glycoside Scleranthus

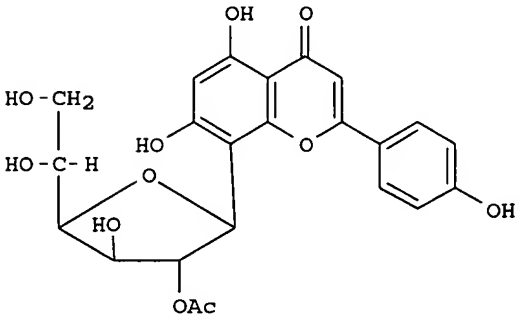
IT Glycosides
RL: BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
(flavonoid, oxo; phenolic and flavone glycosides from Scleranthus uncinatus)
IT Scleranthus uncinatus
(phenolic and flavone glycosides from Scleranthus uncinatus)
IT Glycosides
RL: BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
(phenolic; phenolic and flavone glycosides from Scleranthus uncinatus)
IT **490036-65-2P** 490036-67-4P
RL: BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
(phenolic and flavone glycosides from Scleranthus uncinatus)
RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Agrawal, P; Carbon-13 NMR offiavonoids 1989
(2) Agrawal, P; Phytochemistry 1992, V31, P3307 HCAPLUS
(3) Amri, B; Phytochemistry 1991, V30, P3840
(4) Chopin, J; The Flavonoids 1988, P63 HCAPLUS
(5) Davis, P; Flora of Turkey and the East Aegean Islands 1967, V2
(6) Gluchoff-Fiasson, K; Phytochemistry 1989, V28, P2471 HCAPLUS
(7) Harborne, J; The Flavonoids 1988
(8) Hatano, T; Phytochemistry 1999, V52, P1379 HCAPLUS
(9) Krauze-Baranowska, M; Phytochemistry 1995, V39, P727 HCAPLUS
(10) Kuo, S; Phytochemistry 1996, V41, P309 HCAPLUS
(11) Maatooq, G; Phytochemistry 1997, V44, P187 HCAPLUS
(12) Markham, K; Recent Advances in Flavonoid Research 1982, P40
(13) Merghern, R; Phytochemistry 1995, V38, P637
(14) Numata, A; Chem Pharm Bull 1990, V38, P2862 HCAPLUS
(15) Pauli, G; Phytochemistry 1995, V38, P1245 HCAPLUS
(16) Wu, J; Phytochemistry 1997, V45, P1727 HCAPLUS
(17) Yayh, N; Phytochemistry 2001, V58, P607
IT **490036-65-2P**
RL: BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
(phenolic and flavone glycosides from Scleranthus uncinatus)
RN 490036-65-2 HCAPLUS
CN 4H-1-Benzopyran-4-one, 8-(2-O-β-D-glucopyranosyl-β-D-xylofuranosyl)-5,7-dihydroxy-2-(4-hydroxy-3-methoxyphenyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).




L63 ANSWER 3 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:346522 HCAPLUS
DN 137:60300
ED Entered STN: 09 May 2002
TI Two new C-glucoside flavonoids from leaves of Crataegus pinnatifida Bge. var. major N. E. Br.
AU Zhang, Pei Cheng; Xu, Sui Xu
CS Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, 100050, Peop. Rep. China
SO Chinese Chemical Letters (2002), 13(4), 337-340
CODEN: CCLEE7; ISSN: 1001-8417
PB Chinese Chemical Society
DT Journal
LA English
CC 11-1 (Plant Biochemistry)
Section cross-reference(s): 33
GI



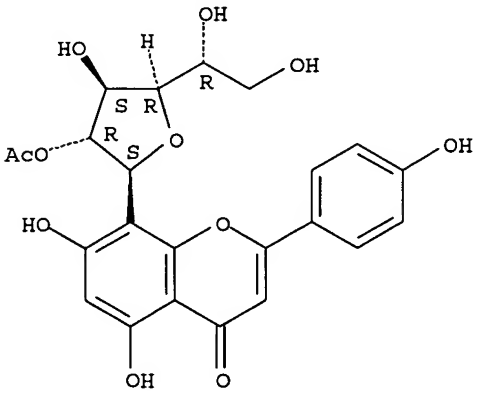

I

AB Two new C-glucoside flavonoids, namely 8-C-β-D-(2''-O-acetyl)glucofuranosyl apigenin (e.g. I) and 3''-O-acetylvitexin, were isolated from leaves of Crataegus pinnatifida Bge. var. major N. E. Br. Their structures were elucidated by the spectroscopic means and chemical evidence.

ST flavonoid C glucoside Crataegus
IT Glycosides
RL: NPO (Natural product occurrence); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(C-flavonoid oxo; C-glucoside flavonoids from Crataegus pinnatifida var. major)
IT Crataegus pinnatifida major
New natural products
(C-glucoside flavonoids from Crataegus pinnatifida var. major)
IT Molecular structure, natural product
(of C-glucoside flavonoids from Crataegus pinnatifida var. major)
IT **439692-84-9P** **439692-86-1P**
RL: NPO (Natural product occurrence); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(C-glucoside flavonoids from Crataegus pinnatifida var. major)
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Al Makdessi, H; Arzneim Forsch Drug Res 1996, V46, P25
(2) Ammon, H; Planta Med 1981, V43, P209 HCAPLUS
(3) Dauguet, J; Phytochemistry 1993, V33, P1503 HCAPLUS
(4) Lin, L; J Chin Pharm University 1999, V30, P21 HCAPLUS
(5) Nikolov, N; Planta Med 1982, V44, P50 HCAPLUS
(6) Poepping, S; Arzneim Forsch Drug Res 1995, V45(Suppl 2), P1157
IT **439692-84-9P**
RL: NPO (Natural product occurrence); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP

(Preparation)
(C-glucoside flavonoids from Crataegus pinnatifida var. major)
RN 439692-84-9 HCAPLUS
CN 4H-1-Benzopyran-4-one, 8-(2-O-acetyl-β-D-glucofuranosyl)-5,7-dihydroxy-2-(4-hydroxyphenyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).




L63 ANSWER 4 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:128852 HCAPLUS
DN 134:366704
ED Entered STN: 21 Feb 2001
TI A stereocontrolled approach to substituted piperidones and piperidines: flavopiridol D-ring analogs
AU Gross, A.; Borcherding, D. R.; Friedrich, D.; Sabol, J. S.
CS Aventis Pharmaceuticals Inc., Bridgewater, NJ, 08807-0800, USA
SO Tetrahedron Letters (2001), 42(9), 1631-1633
CODEN: TELEAY; ISSN: 0040-4039
PB Elsevier Science Ltd.
DT Journal
LA English
CC 26-4 (Biomolecules and Their Synthetic Analogs)
OS CASREACT 134:366704
AB A stereocontrolled approach to substituted piperidones and piperidines is presented, and their utility as intermediates for the synthesis of flavopiridol D-ring analogs is described.
ST piperidine flavopiridol analog stereoselective prepn; piperidone flavopiridol analog stereoselective prepn
IT Stereoselective synthesis
(of piperidones and piperidines as flavopiridol D-ring analogs)
IT 75-98-9
RL: RGT (Reagent); RACT (Reactant or reagent)
(preparation of)
IT 146426-40-6P, Flavopiridol
RL: PNU (Preparation, unclassified); PREP (Preparation)
(stereoselective preparation of piperidones and piperidines as flavopiridol D-ring analogs)
IT 78-39-7 610-96-8, Methyl 2-chlorobenzoate 830-79-5, 2,4,6-Trimethoxybenzaldehyde 4202-14-6 5927-18-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(stereoselective preparation of piperidones and piperidines as flavopiridol D-ring analogs)
IT 97024-78-7P 100257-91-8P 115130-74-0P 340203-15-8P 340203-16-9P
340203-17-0P 340203-18-1P 340203-19-2P 340203-20-5P 340203-21-6P
340203-22-7P 340203-23-8P 340203-24-9P 340203-25-0P 340203-26-1P
340203-27-2P 340203-28-3P 340203-29-4P 340203-30-7P 340203-31-8P
**340203-32-9P** 340203-34-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)
(stereoselective preparation of piperidones and piperidines as flavopiridol D-ring analogs)

IT **340203-33-0P 340203-35-2P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(stereoselective preparation of piperidones and piperidines as flavopiridol D-ring analogs)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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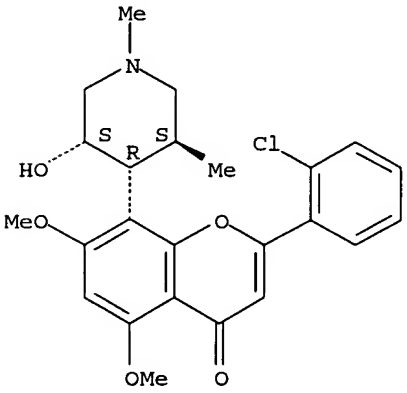
IT **340203-32-9P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(stereoselective preparation of piperidones and piperidines as flavopiridol D-ring analogs)

RN 340203-32-9 HCAPLUS
CN 4H-1-Benzopyran-4-one, 2-(2-chlorophenyl)-8-[(3R,4S,5R)-3-hydroxy-1,5-dimethyl-4-piperidinyl]-5,7-dimethoxy-, rel- (9CI) (CA INDEX NAME)

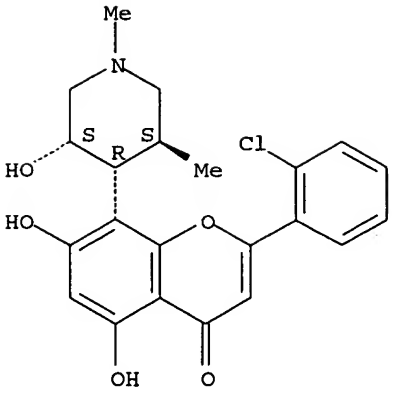
Relative stereochemistry.




IT **340203-33-0P 340203-35-2P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(stereoselective preparation of piperidones and piperidines as flavopiridol D-ring analogs)

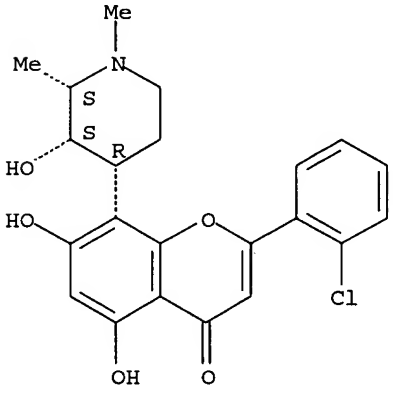
RN 340203-33-0 HCAPLUS
CN 4H-1-Benzopyran-4-one, 2-(2-chlorophenyl)-5,7-dihydroxy-8-[(3R,4S,5R)-3-hydroxy-1,5-dimethyl-4-piperidinyl]-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

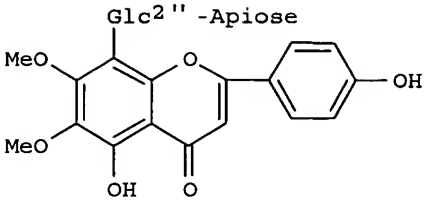


RN 340203-35-2 HCAPLUS
CN 4H-1-Benzopyran-4-one, 2-(2-chlorophenyl)-5,7-dihydroxy-8-[(2R,3R,4S)-3-hydroxy-1,2-dimethyl-4-piperidinyl]-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L63 ANSWER 5 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:554970 HCAPLUS
DN 133:278492
ED Entered STN: 13 Aug 2000
TI Biotransformation of a C-glycosylflavone, abrusin 2"-O-β-D-apioside, by human intestinal bacteria
AU Li, Yan; Meselhy, Meselhy R.; Wang, Li-Quan; Ma, Chao-Mei; Nakamura, Norio; Hattori, Masao
CS Institute of Natural Medicine, Toyama Medical and Pharmaceutical University, Toyama, 930-0194, Japan
SO Chemical & Pharmaceutical Bulletin (2000), 48(8), 1239-1241
CODEN: CPBTAL; ISSN: 0009-2363
PB Pharmaceutical Society of Japan
DT Journal
LA English
CC 10-2 (Microbial, Algal, and Fungal Biochemistry)
GI




I

AB After anaerobic incubation of abrusin 2"-O-β-D-apioside (I) with a human fecal suspension, five metabolites were isolated and identified as abrusin, 1-(2',6'-dihydroxy-3',4'-dimethoxyphenyl)-3-(4"-hydroxyphenyl)propan-1-one, 5,6-dimethoxybenzene-1,3-diol, 3-(4'-hydroxyphenyl)propionic acid, and 3-phenylpropionic acid. However, Me ether derivs. of abrusin (4'-O-methylabrusin and 4'-O-, 5-O-dimethylabrusin) resisted degradation under the same conditions.

ST abrusin apioside biotransformation intestinal bacteria

IT Intestinal bacteria
(biotransformation of abrusin apioside by human intestinal bacteria)

IT 3681-93-4, Vitexin 211568-62-6, Precatorin II
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(biotransformation by human intestinal bacteria)

IT **120727-04-0**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(biotransformation of abrusin apioside by human intestinal bacteria)

IT 120727-02-8, Abrusin 299404-85-6
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(biotransformation of abrusin apioside by human intestinal bacteria)

IT 501-52-0, 3-Phenylpropionic acid 501-97-3, 3-(4'-Hydroxyphenyl)propionic acid 13077-75-3
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(biotransformation of abrusin apioside by human intestinal bacteria)

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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(18) Meselhy, M; J Nat Prod 1993, V56, P39 HCAPLUS
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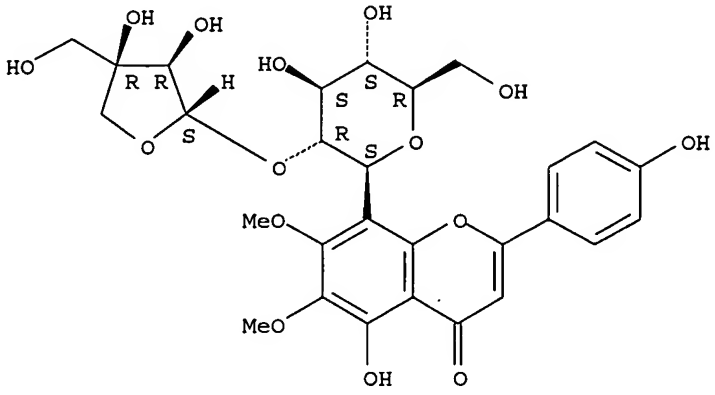
(21) Webby, R; Phytochemistry 1994, V36, P1323 HCAPLUS

(22) Williams, C; Phytochemistry 1994, V37, P1045 HCAPLUS
IT **120727-04-0**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(biotransformation of abrusin apioside by human intestinal bacteria)
RN 120727-04-0 HCAPLUS
CN 4H-1-Benzopyran-4-one, 8-(2-O-D-apio-β-D-furanosyl-β-D-glucopyranosyl)-5-hydroxy-2-(4-hydroxyphenyl)-6,7-dimethoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).




L63 ANSWER 6 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1998:409308 HCAPLUS
DN 129:173045
ED Entered STN: 04 Jul 1998
TI Saponins and C-glycosyl flavones from the seeds of Abrus precatorius
AU Ma, Chao-Mei; Nakamura, Norio; Hattori, Masao
CS Research Institute for Wakan-Yaku (Traditional Sino-Japanese Medicines), Toyama Medical and Pharmaceutical University, Toyama, 930-0194, Japan
SO Chemical & Pharmaceutical Bulletin (1998), 46(6), 982-987
CODEN: CPBTAL; ISSN: 0009-2363
PB Pharmaceutical Society of Japan
DT Journal
LA English
CC 11-1 (Plant Biochemistry)
Section cross-reference(s): 33
AB Two new saponins, 3-O-[β-D-glucuronopyranosyl-(1 → 2)-β-D-glucopyranosyl]hederagenin (named abrus-saponin I) and 3-O-[β-D-glucuronopyranosyl-(1 → 2)-β-D-glucopyranosyl]oleanolic acid 28-β-D-glucopyranosyl ester (abrus-saponin II), and three new flavones, 6-C-β-D-glucopyranosyl-4',5-dihydroxy-7,8-dimethoxyflavone (precatorin I), 6-C-[β-D-apiofuranosyl-(1 → 2)-β-D-glucopyranosyl]-4',5-dihydroxy-7,8-dimethoxyflavone (precatorin II), 6-C-[β-D-apiofuranosyl-(1 → 2)-β-D-glucopyranosyl]-4',5-dihydroxy-7-methoxyflavone (precatorin III), were isolated from the seeds of Abrus precatorius L. together with twelve known compds. including a naturally new saponin, 3-O-[β-D-glucuronopyranosyl-(1 → 2)-β-D-glucopyranosyl]oleanolic acid. Their structures were determined on the basis of chemical and spectroscopic methods. In addition, the unusual NMR spectral behavior of the flavone C-glycosides is also discussed.
ST abrussaponin saponin precatorin flavone Abrus
IT Glycosides
Glycosides
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)

(C-flavonoid oxo; from seeds of Abrus precatorius)
IT New natural products
(abrus-saponin I (saponin))
IT New natural products
(abrus-saponin II (saponin))
IT Saponins
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(from seeds of Abrus precatorius)
IT Molecular structure, natural product
(of abrus-saponin I (saponin))
IT Molecular structure, natural product
(of abrus-saponin II (saponin))
IT Molecular structure, natural product
(of precatorin I (C-glycosyl flavone))
IT Molecular structure, natural product
(of precatorin II (C-glycosyl flavone))
IT Molecular structure, natural product
(of precatorin III (C-glycosyl flavone))
IT New natural products
(precatorin I (C-glycosyl flavone))
IT New natural products
(precatorin II (C-glycosyl flavone))
IT New natural products
(precatorin III (C-glycosyl flavone))
IT Abrus precatorius
(saponins and C-glycosyl flavones from seeds of Abrus precatorius)
IT 487-58-1 526-31-8, Abrine 1447-88-7 6601-62-3 115330-90-0, Kaikasaponin III 117210-04-5, Kaikasaponin I 117230-29-2, Kaikasaponin III methyl ester 120727-02-8, Abrusin **120727-04-0** 134859-87-3 158275-42-4 163597-20-4, Phaseoside IV
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(from seeds of Abrus precatorius)
IT 120727-05-1P, Precatorin I 211568-32-0P, Abrus saponin I 211568-33-1P, Abrus saponin II 211568-62-6P, Precatorin II 211568-81-9P, Precatorin III
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(from seeds of Abrus precatorius)
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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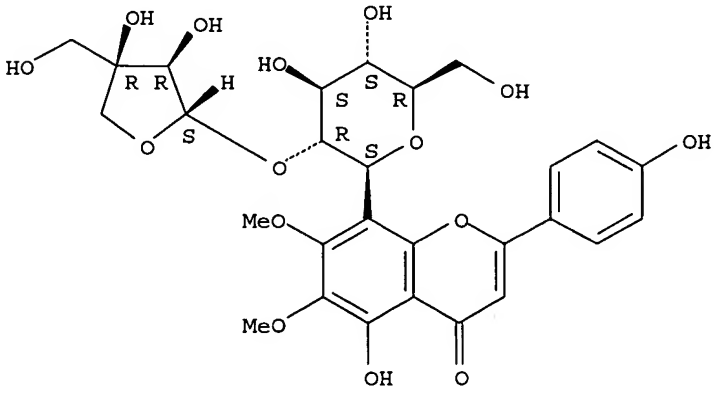
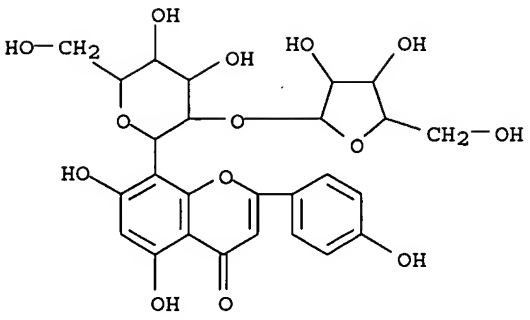
(15) Saito, S; Eur J Med Chem 1994, V29, P455 HCAPLUS
(16) Tanaka, Y; Shoyakugaku Zasshi 1991, V45, P148 HCAPLUS
IT **120727-04-0**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(from seeds of Abrus precatorius)
RN 120727-04-0 HCAPLUS

CN 4H-1-Benzopyran-4-one, 8-(2-O-D-apio-β-D-furanosyl-β-D-glucopyranosyl)-5-hydroxy-2-(4-hydroxyphenyl)-6,7-dimethoxy- (9CI) (CA INDEX NAME)

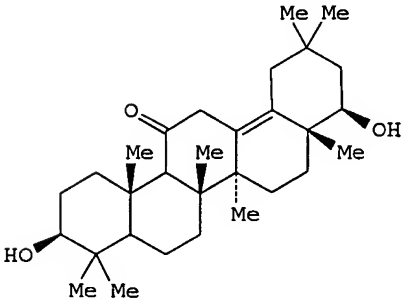
Absolute stereochemistry. Rotation (-).



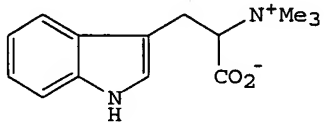
L63 ANSWER 7 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1994:319424 HCAPLUS
DN 120:319424
ED Entered STN: 25 Jun 1994
TI Flavonoid glycosides from Cotoneaster thymaefolia
AU Palme, Elisa; Bilia, Anna Rita; De Feo, Vincenzo; Morelli, Ivano
CS Dip. Chim. Bioorg., Univ. Pisa, Pisa, 56126, Italy
SO Phytochemistry (1994), 35(5), 1381-2
CODEN: PYTCAS; ISSN: 0031-9422
DT Journal
LA English
CC 11-1 (Plant Biochemistry)
Section cross-reference(s): 26, 33
AB A new C-glycoside, vitexin-2''-O-α-D-arabinofuranoside, was isolated from the leaves of Cotoneaster thymaefolia. Vitexin, vitexin-2''-O-rhamnoside, rutin, quercetin 3-rhamnoside, 5,7,2',5'-tetrahydroxyflavanone and its 7-glucoside were also identified. The structures of the compds. were determined by spectroscopic methods.
ST Cotoneaster flavonoid glycoside isolation
IT Cotoneaster thymaefolia
(flavonoid glycosides from leaves of, structures of)
IT Glycosides
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(flavonoid, from leaves of Cotoneaster thymaefolia, structure of)
IT 153-18-4, Rutin 522-12-3, Quercetin 3-rhamnoside 74175-75-0 146555-77-3
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(from leaves of Cotoneaster thymaefolia)
IT **155346-48-8**, Vitexin-2''-O-α-D-arabinofuranoside
RL: BOC (Biological occurrence); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(structure and isolation of, from leaves of Cotoneaster thymaefolia)
IT **155346-48-8**, Vitexin-2''-O-α-D-arabinofuranoside
RL: BOC (Biological occurrence); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(structure and isolation of, from leaves of Cotoneaster thymaefolia)
RN 155346-48-8 HCAPLUS
CN 4H-1-Benzopyran-4-one, 8-(2-O-α-D-arabinofuranosyl-β-D-glucopyranosyl)-5,7-dihydroxy-2-(4-hydroxyphenyl)- (9CI) (CA INDEX NAME)



L63 ANSWER 8 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1991:489078 HCAPLUS
DN 115:89078
ED Entered STN: 06 Sep 1991
TI Studies on leguminous plants. Part XIX. A new sapogenol and other constituents in abri semen, the seeds of Abrus precatorius L. I
AU Kinjo, Junei; Matsumoto, Kumiko; Inoue, Mutsumi; Takeshita, Takashi; Nohara, Toshihiro
CS Fac. Pharm. Sci., Kumamoto Univ., Kumamoto, 862, Japan
SO Chemical & Pharmaceutical Bulletin (1991), 39(1), 116-19
CODEN: CPBTAL; ISSN: 0009-2363
DT Journal
LA English
CC 11-1 (Plant Biochemistry)
Section cross-reference(s): 30, 63
GI



I

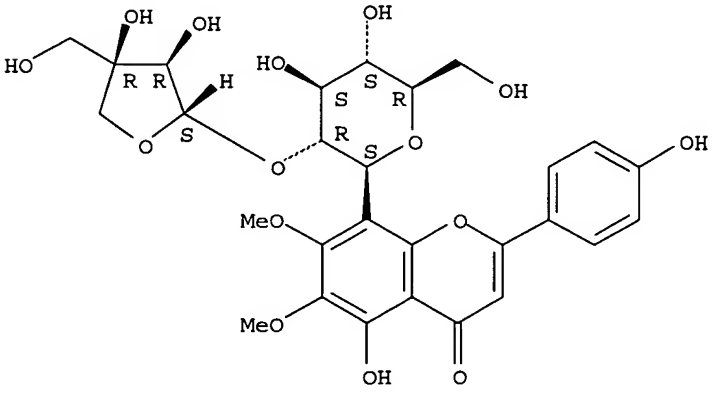


II

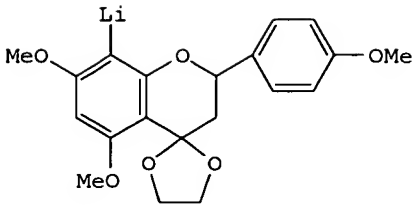
AB A new sapogenol, abrisapogenol J (I), was isolated from the methanolyzate of A. precatorius seeds, together with sophoradiol, its 22-O-acetate (II) and hederagenin Me ester. The structure of I was 3β,22β-dihydroxy-11-oxoolean-13(18)-ene based on hetero nuclear multiple bonds correlation (HMBC) spectroscopy. In addition, various compds., tri-Me tryptophan dipolar ion (III) kaikasaponin III Me ester, abrine, abrusin and its 2''-O-apioside were obtained from the methanolic extract This is the first example of the isolation of compds. I-III in nature.
ST oleanene triterpene Abrus seed; Abrus seed compn; triterpene Abrus seed; abrisapogenol J Abrus seed; sapogenol Abrus seed; sophoradiol acetate Abrus seed; tryptophan trimethyl Abrus seed
IT Nomenclature, new natural products
(abrisapogenol J (triterpene))
IT Molecular structure, natural product
(of abrisapogenol J (triterpene))
IT Triterpenes and Triterpenoids
RL: BIOL (Biological study)

(oleanene, from Abrus precatorius seeds, isolation and structure of)
IT Abrus precatorius
(sapogenol and other constituents of seeds of, isolation and structure of)
IT 487-58-1 526-31-8, Abrine 6822-47-5, Sophoradiol 17736-04-8, Hederagenin methyl ester 117230-29-2, Kaikasaponin III methyl ester 120727-02-8, Abrusin **120727-04-0**
RL: BIOL (Biological study)
(from Abrus precatorius seeds)
IT 86425-27-6, Sophoradiol 22-O-acetate 135308-91-7, Abrisapogenol J
RL: BIOL (Biological study)
(from Abrus precatorius seeds, isolation and structure of)
IT **120727-04-0**
RL: BIOL (Biological study)
(from Abrus precatorius seeds)
RN 120727-04-0 HCAPLUS
CN 4H-1-Benzopyran-4-one, 8-(2-O-D-apio-β-D-furanosyl-β-D-glucopyranosyl)-5-hydroxy-2-(4-hydroxyphenyl)-6,7-dimethoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).




L63 ANSWER 9 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1989:439717 HCAPLUS
DN 111:39717
ED Entered STN: 05 Aug 1989
TI Convenient synthesis of C-β-D-glucopyranosyl arenes. Synthesis of 5,7,4'-tri-O-methylvitexin
AU Frick, Wendelin; Schmidt, Richard R.
CS Fak. Chem., Univ. Konstanz, Konstanz, D-7750, Fed. Rep. Ger.
SO Liebigs Annalen der Chemie (1989), (6), 565-70
CODEN: LACHDL; ISSN: 0170-2041
DT Journal
LA German
CC 33-3 (Carbohydrates)
OS CASREACT 111:39717
GI

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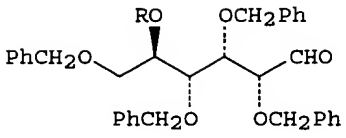
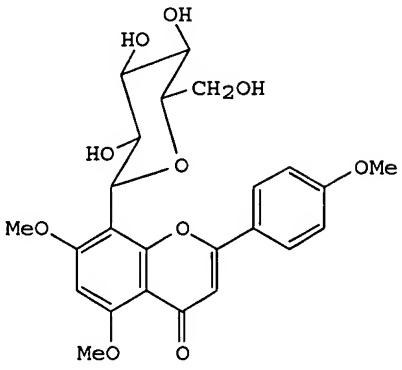



II




III

AB Reaction of 4,2,6-MeO(R2)C6H2Li (R = H, OMe) and flavanones I with the D-glucoses II (R = CH2Ph, CH2OMe) furnished the C-glucosyl derivs. in good yields. Hydrogenolytic debenzylation in the presence of AcOH leads directly to the thermodynamically stable C-(β-D-glucopyranosyl) arenes. 5,7,4'-Tri-O-methylvitexin (III) is obtained in two steps from the flavonoid glycoside.

ST glucopyranosyl arene; arene glucoside; vitexin trimethyl ether

IT Glycosides
RL: SPN (Synthetic preparation); PREP (Preparation)
(C-, glucopyranosylarenes, preparation of)

IT 66074-95-1 119529-70-3
RL: PROC (Process)
(acetalization of)

IT 53929-48-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(methoxymethylation of)

IT 119529-65-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and acetalhydrolysis of)

IT 86762-94-9P 119529-59-8P 119529-60-1P 119529-61-2P 119529-62-3P 119529-63-4P 119529-64-5P 119529-71-4P 119529-72-5P 119529-75-8P 119529-76-9P 119529-81-6P 119529-82-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and acetylation of)

IT 157495-58-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and bromination of)

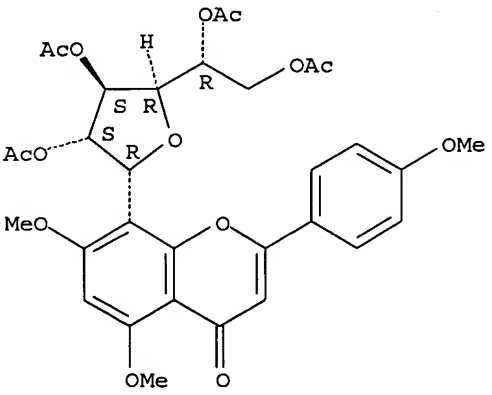
IT 119529-67-8P 119529-80-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclization of)

IT 119529-57-6P 119529-58-7P 119592-94-8P 119677-12-2P 119677-13-3P 119677-14-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrogenolysis of)

IT 119529-73-6P 119529-74-7P 119529-77-0P 119529-78-1P 119529-83-8P

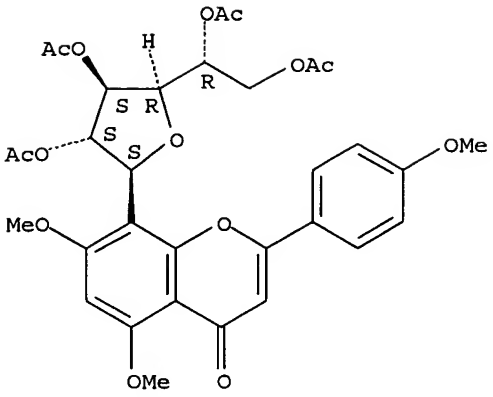
119567-06-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and oxidation of)
IT 157495-49-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with glucose derivative)
IT 119529-66-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with lithioarenes)
IT 9002-23-7P, Amberlite IR-120 20197-48-2P 38714-70-4P 119529-55-4P
119529-56-5P **119529-79-2P 119529-84-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 93414-73-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, hydrogenolysis, and acetylation of)
IT 34425-71-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with glucose derivative)
IT 14774-77-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with glucose derivs.)
IT 78699-85-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with lithioarenes)
IT **119529-79-2P 119529-84-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 119529-79-2 HCAPLUS
CN 4H-1-Benzopyran-4-one, 5,7-dimethoxy-2-(4-methoxyphenyl)-8-(2,3,5,6-tetra-O-acetyl-α-D-glucofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

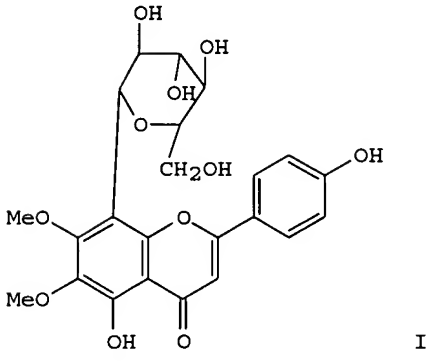



RN 119529-84-9 HCAPLUS
CN 4H-1-Benzopyran-4-one, 5,7-dimethoxy-2-(4-methoxyphenyl)-8-(2,3,5,6-tetra-O-acetyl-β-D-glucofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L63 ANSWER 10 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1989:228586 HCAPLUS
DN 110:228586
ED Entered STN: 25 Jun 1989
TI 8-C-Glucosylscutellarein 6,7-dimethyl ether and its 2"-O-apioside from Abrus precatorius
AU Markham, Kenneth R.; Wallace, James W.; Babu, Y. Niranjan; Murty, V. Krishna; Rao, M. Gopala
CS Chem. Div., DSIR, Petone, N. Z.
SO Phytochemistry (1988), Volume Date 1989, 28(1), 299-301
CODEN: PYTCAS; ISSN: 0031-9422
DT Journal
LA English
CC 11-1 (Plant Biochemistry)
Section cross-reference(s): 26, 33
GI

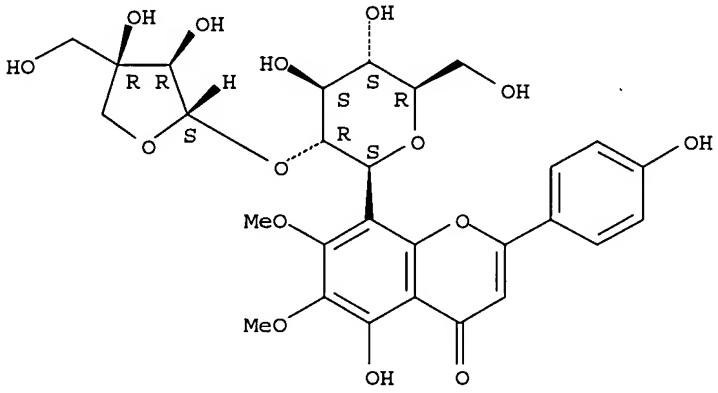


I

AB 8-C-Glucosylscutellarein 6,7-dimethyl ether (abrusin, I) and its 2''-O-apioside were identified as minor components in the seeds of A. precatorius. Their structures were determined by UV-visible and 1H- and 13C-NMR spectrometry and chemical methods. Both are new natural products and are the first examples of flavone-C-glycosides containing a trioxygenated A-ring. Abrusin 2''-O-apioside is the only known apioside of a flavone-C-glycoside.
ST Abrus seed abrusin apioside; abrusin apioside flavone glycoside Abrus
IT Nomenclature, new natural products
(abrusin (flavonoid glycoside))
IT Abrus precatorius
(abrusin and abrusin apioside from seeds of, isolation and structure

of)
IT Molecular structure, natural product
(of abrusin (flavonoid glycoside))
IT Glycosides
RL: BIOL (Biological study)
(flavone C-, from Abrus precatorius, isolation and structure of abrusin)
IT 120727-02-8, Abrusin **120727-04-0**
RL: BIOL (Biological study)
(from Abrus precatorius seeds, isolation and structure of)
IT 120727-05-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT **120727-04-0**
RL: BIOL (Biological study)
(from Abrus precatorius seeds, isolation and structure of)
RN 120727-04-0 HCAPLUS
CN 4H-1-Benzopyran-4-one, 8-(2-O-D-apio-β-D-furanosyl-β-D-glucopyranosyl)-5-hydroxy-2-(4-hydroxyphenyl)-6,7-dimethoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).




L63 ANSWER 11 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1987:575780 HCAPLUS
DN 107:175780
ED Entered STN: 14 Nov 1987
TI Preparation of pyridinylflavone derivatives as calcium antagonists and smooth muscle relaxants
IN Leonardi, Amedeo; Pennini, Renzo; Cazzulani, Pietro; Nardi, Dante
PA Recordati S. A. Chemical and Pharmaceutical Co., Switz.
SO Eur. Pat. Appl., 32 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C07D405-04
ICS C07D405-14; A61K031-445
CC 26-4 (Biomolecules and Their Synthetic Analogs)
Section cross-reference(s): 1, 27
FAN.CNT 1

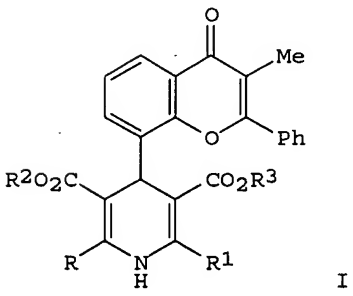
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | EP 223744 | A2 | 19870527 | EP 1986-830300 | 19861020 |
| | EP 223744 | A3 | 19880914 | | |
| | EP 223744 | B1 | 19920311 | | |
| | R: AT, BE, CH, DE, ES, FR, GB, GR, LI, LU, NL, SE | | | | |
| | IL 80229 | A1 | 19901105 | IL 1986-80229 | 19861003 |
| | NO 8604108 | A | 19870423 | NO 1986-4108 | 19861015 |

| | | | | | |
|---|---|---|---|---|---|
| | NO 167570 | B | 19910812 | | |
| | NO 167570 | C | 19911120 | | |
| | ZA 8607941 | A | 19870624 | ZA 1986-7941 | 19861020 |
| | ES 2002425 | A6 | 19880801 | ES 1986-2677 | 19861020 |
| | AT 73453 | E | 19920315 | AT 1986-830300 | 19861020 |
| | FI 8604260 | A | 19870423 | FI 1986-4260 | 19861021 |
| | FI 89167 | B | 19930514 | | |
| | FI 89167 | C | 19930825 | | |
| | JP 62161781 | A2 | 19870717 | JP 1986-251553 | 19861021 |
| | JP 07072186 | B4 | 19950802 | | |
| | HU 45525 | A2 | 19880728 | HU 1986-4363 | 19861021 |
| | HU 202863 | B | 19910429 | | |
| | CA 1330994 | A1 | 19940726 | CA 1986-520953 | 19861021 |
| | DK 8605063 | A | 19870423 | DK 1986-5063 | 19861022 |
| | DK 169408 | B1 | 19941024 | | |
| | AU 8664273 | A1 | 19870430 | AU 1986-64273 | 19861022 |
| | AU 596382 | B2 | 19900503 | | |
| | CN 86107544 | A | 19871125 | CN 1986-107544 | 19861022 |
| | US 4806534 | A | 19890221 | US 1986-921397 | 19861022 |
| PRAI | IT 1985-22578 | A | 19851022 | | |
| | EP 1986-830300 | A | 19861020 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---|---|---|
| EP 223744 | ICM | C07D405-04 |
| | ICS | C07D405-14; A61K031-445 |
| US 4806534 | NCL | 514/233.500; 514/232.500; 514/253.110; 514/316.000; 514/318.000; 514/337.000; 544/131.000; 544/365.000; 546/187.000; 546/193.000; 546/269.700; 546/271.100; 546/271.400; 546/272.100; 546/274.700; 546/275.400; 546/279.100; 546/283.100 |

GI




I

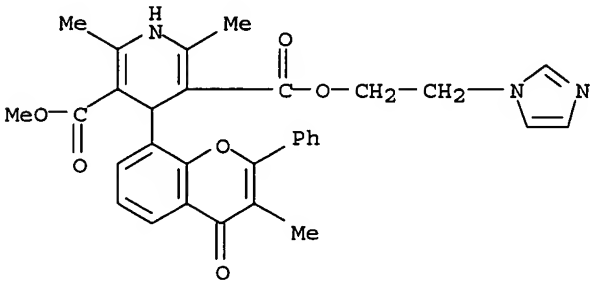
AB Title compds. I (R, R1 = C1-4 alkyl, formylalkyl, cyanoalkyl, C1-4 hydroxyalkyl; R2, R3 = C1-6 alkyl, C2-6 alkenyl, -alkynyl, C5-7 cycloalkyl, aralkyl, Ph, etc., R4R5N-alkyl; R4, R5 = H, alkyl, Ph, etc., or R4R5N = heterocyclyl) their optical isomers, diastereomers, and salts were prepared as calcium antagonists and smooth muscle relaxants. 3-Methyl-8-formylflavone, MeCOCH2CO2Me, MeC(NH2):CHCO2Me and EtOH were refluxed to give I (R-R3 = Me) (II). II had IC50 of 5.55 x 10-9 nM on Ca-antagonistic binding sites using rat brain membranes. in vitro. The activity on urodynamic parameters was detected by cystometric recordings on rats given II at 10 mg/kg orally; the changes in bladder volume capacity and micturition pressure were +18 and -14%, resp.

ST flavonylpyridinedicarboxylate prepn drug; calcium antagonist flavonylpyridinedicarboxylate prepn; muscle smooth relaxant flavonylpyridinedicarboxylate prepn

IT Bladder
(muscle relaxants for, methylflavonyldihydropyridinedicarboxylates as)

IT Muscle relaxants
(smooth, methylflavonyldihydropyridinedicarboxylates)
IT 7440-70-2, biological studies
RL: BIOL (Biological study)
(antagonists for, flavone derivs. as)
IT 5470-11-1, Hydroxylamine hydrochloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with formyldihydropyridinedicarboxylate, cyano derivative from)
IT 54527-68-3, β-Chloroethyl acetoacetate 60705-25-1, Methyl 4,4-dimethoxyacetoacetate
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with methylformylflavone)
IT 43107-08-0, 2-Cyanoethyl 3-aminocrotonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of with chloroethyl (methylflavonmethylidine)acetoacetate)
IT 14205-46-0, Isopropyl 3-aminocrotonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of with chloroethyl (methylflavonyl)acetoacetate)
IT 14205-39-1, Methyl 3-aminocrotonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with Me acetoacetate and methylformylflavone)
IT 105-45-3, Methyl acetoacetate
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with Me aminocrotonate and methylformylflavone)
IT 110714-57-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with cyanoethyl aminocrotonate)
IT 110714-51-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with methylformylflavone and piperidinoethyl acetoacetate)
IT 108852-41-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with methylformylflavone and piperidoethyl aminocrotonate)
IT 103085-54-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and condensation of, with acetoacetate)
IT 110714-88-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclocondensation of, with Me aminocrotonate)
IT 110714-52-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclocondensation of, with iso-Pr aminocrotonate)
IT 110714-59-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and esterification of)
IT 110714-89-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrolysis of)
IT 110714-49-3P 110714-50-6P 110714-53-9P 110714-54-0P 110714-55-1P
110714-56-2P 110714-58-4P 110714-60-8P 110714-61-9P 110714-62-0P
110714-63-1P 110714-64-2P 110714-65-3P 110714-66-4P 110714-67-5P
110714-68-6P 110714-69-7P 110714-70-0P 110714-71-1P 110714-72-2P
110714-73-3P 110714-74-4P 110714-75-5P 110714-76-6P 110714-77-7P
110714-78-8P **110714-79-9P** 110714-80-2P 110714-81-3P
110714-82-4P 110714-83-5P 110714-84-6P 110714-85-7P 110714-86-8P
110714-87-9P 110714-90-4P 110714-91-5P 110714-92-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as calcium antagonist and smooth muscle relaxant)

IT 103-67-3, N-Methylbenzylamine 28075-29-8, N-Methyl-3,3-diphenylpropylamine
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with flavonyldihydropyridinedicarboxylate derivative)
IT 51950-71-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(reduction of, formyl analog from)
IT **110714-79-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as calcium antagonist and smooth muscle relaxant)
RN 110714-79-9 HCAPLUS
CN 3,5-Pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(3-methyl-4-oxo-2-phenyl-4H-1-benzopyran-8-yl)-, 2-(1H-imidazol-1-yl)ethyl methyl ester (9CI) (CA INDEX NAME)



L63 ANSWER 12 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1985:62091 HCAPLUS
DN 102:62091
ED Entered STN: 24 Feb 1985
TI Chromone- and thiochromone-substituted 1,4-dihydropyridine derivatives and their use in pharmaceuticals
IN Goldmann, Siegfried; Franckowiak, Gerhard; Schramm, Matthias; Thomas, Guenter; Gross, Rainer
PA Bayer A.-G. , Fed. Rep. Ger.
SO Ger. Offen., 42 pp.
CODEN: GWXXBX
DT Patent
LA German
IC C07D405-04; C07D405-14; C07D413-12; C07D413-14; C07D417-04; C07D417-06; C07D417-14; C07D409-10; A61K031-44
CC 27-16 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 1
FAN.CNT 2

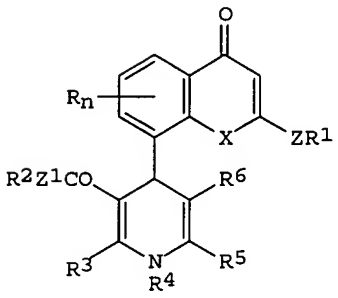
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DE 3311005 | A1 | 19840927 | DE 1983-3311005 | 19830325 |
| | DK 8401453 | A | 19840926 | DK 1984-1453 | 19840229 |
| | DK 163733 | B | 19920330 | | |
| | NO 8400951 | A | 19840926 | NO 1984-951 | 19840313 |
| | US 4540789 | A | 19850910 | US 1984-589436 | 19840314 |
| | EP 123112 | A2 | 19841031 | EP 1984-102903 | 19840316 |
| | EP 123112 | A3 | 19870722 | | |
| | EP 123112 | B1 | 19880921 | | |
| | R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE | | | | |
| | AT 37367 | E | 19881015 | AT 1984-102903 | 19840316 |
| | AU 8425914 | A1 | 19840927 | AU 1984-25914 | 19840320 |
| | AU 558035 | B2 | 19870115 | | |
| | ES 530802 | A1 | 19841101 | ES 1984-530802 | 19840321 |
| | FI 8401154 | A | 19840926 | FI 1984-1154 | 19840322 |
| | FI 82463 | B | 19901130 | | |
| | FI 82463 | C | 19910311 | | |

| | | | | | |
|---|---|---|---|---|---|
| | JP 59176281 | A2 | 19841005 | JP 1984-54581 | 19840323 |
| | JP 05049671 | B4 | 19930726 | | |
| | ZA 8402165 | A | 19841031 | ZA 1984-2165 | 19840323 |
| | HU 34186 | O | 19850228 | HU 1984-1178 | 19840323 |
| | HU 191302 | B | 19870227 | | |
| | CA 1236460 | A1 | 19880510 | CA 1984-450362 | 19840323 |
| | US 4628107 | A | 19861209 | US 1985-750571 | 19850628 |
| | ES 552230 | A1 | 19870501 | ES 1986-552230 | 19860220 |
| | ES 552231 | A1 | 19870501 | ES 1986-552231 | 19860220 |
| | ES 552232 | A1 | 19870501 | ES 1986-552232 | 19860220 |
| PRAI | DE 1983-3311004 | A | 19830325 | | |
| | DE 1983-3311005 | A | 19830325 | | |
| | US 1984-589436 | A2 | 19840314 | | |
| | US 1984-589615 | A2 | 19840314 | | |
| | EP 1984-102903 | A | 19840316 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---|---|---|
| DE 3311005 | IC | C07D405-04IC C07D405-14IC C07D413-12IC C07D413-14IC C07D417-04IC C07D417-06IC C07D417-14IC C07D409-10IC A61K031-44 |
| US 4540789 | NCL | 514/337.000; 544/238.000; 544/284.000; 544/353.000; 544/364.000; 546/014.000; 546/141.000; 546/143.000; 546/167.000; 546/194.000; 546/256.000; 546/269.700; 546/270.700; 546/271.400; 546/272.100; 546/272.700; 546/274.400; 546/275.100; 546/275.400; 546/276.100; 546/276.400; 546/277.400; 546/277.700; 546/278.400; 546/280.100; 546/280.400; 546/281.400; 546/283.100; 546/283.400 |
| US 4628107 | NCL | 549/023.000; 546/280.100; 546/283.100; 548/525.000; 549/060.000; 549/401.000; 549/402.000; 549/403.000 |

GI



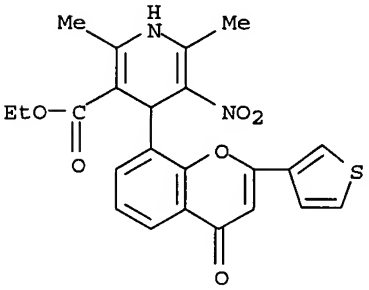
I

AB Antihypotensive and cardiotonic (no data) title compds. [I; R = halo; R1 = H, (un)substituted alkyl, aryl, heteroaryl; R2 = (un)substituted alkyl, alkenyl, cycloalkyl, cycloalkenyl, aryl, heteroaryl; R3, R5 = H, (un)substituted alkyl, alkenyl, cycloalkyl, optionally with heteroatom interrupters; R4 = H, (un)substituted alkyl; R6 = H, alkyl, polyfluoroalkyl, CO2H, NO2, cyano, halo; Z = bond, alkylene, oxaalkylene, thiaalkylene; Z1 = bond, O, S, R7N; R7 = H, alkyl; n = 0-3] were prepared Thus, 2-phenyl-4-oxo-4H-2-benzopyran-8-carboxaldehyde, H2NCMe:CHCO2Me, and MeCOCH2NO2 were refluxed 3 h in EtOH to give I (R1 = Ph, R2 = R3 = R5 = Me, R4 = H, R6 = NO2, X = Z1 = O; Z = bond, n = 0).

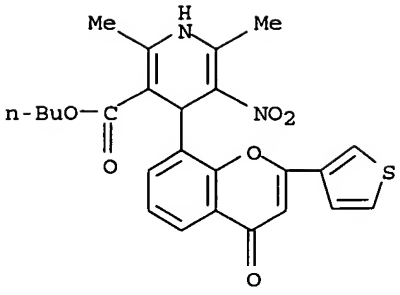
ST cardiotonic benzopyranylpyridinecarboxylate; antihypotensive benzopyranylpyridinecarboxylate; benzopyrancarboxaldehyde cyclocondensation aminocrotonate nitroacetone; pyridinecarboxylate benzopyranyl benzothiopyranyl

IT Antihypotensives

(benzopyranyl- and benzothiopyranylpyridinecarboxylates)
IT Cyclocondensation reaction
(of aminocrotonates, nitroacetone, and benzopyran- and benzothiopyrancarboxaldehydes)
IT Heart
(stimulants, benzopyranyl- and benzothiopyranylpyridinecarboxylates)
IT 1118-61-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with acetoacetates and benzopyran- and benzothiopyrancarboxaldehydes)
IT 591-60-6 10230-68-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with aminocrotonates and benzopyran- and benzothiopyrancarboxaldehydes)
IT 87626-84-4 94127-35-2 94127-37-4 94127-38-5 94127-39-6
94127-71-6 94127-72-7 94419-93-9 94419-94-0 94420-02-7
94420-03-8 94420-04-9 94420-05-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with aminocrotonates and nitroacetone)
IT 14205-39-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with nitroacetone and benzopyran- and benzothiopyrancarboxaldehydes)
IT 94419-95-1P 94419-96-2P 94419-97-3P 94419-98-4P 94419-99-5P
94420-00-5P 94420-01-6P 94420-06-1P 94420-07-2P 94420-08-3P
94420-09-4P 94420-10-7P 94420-11-8P 94420-12-9P **94420-13-0P**
**94420-14-1P** 94420-15-2P 94420-16-3P 94420-17-4P
94420-18-5P 94420-19-6P 94420-20-9P 94420-21-0P 94420-22-1P
94420-23-2P 94420-24-3P 94420-25-4P 94420-28-7P 94420-29-8P
94420-30-1P 94420-31-2P 94420-32-3P 94420-33-4P 94420-34-5P
94420-35-6P 94420-36-7P 94420-37-8P 94420-38-9P 94426-33-2P
94444-51-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT **94420-13-0P 94420-14-1P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 94420-13-0 HCAPLUS
CN 3-Pyridinecarboxylic acid, 1,4-dihydro-2,6-dimethyl-5-nitro-4-[4-oxo-2-(3-thienyl)-4H-1-benzopyran-8-yl]-, ethyl ester (9CI) (CA INDEX NAME)




RN 94420-14-1 HCAPLUS
CN 3-Pyridinecarboxylic acid, 1,4-dihydro-2,6-dimethyl-5-nitro-4-[4-oxo-2-(3-thienyl)-4H-1-benzopyran-8-yl]-, butyl ester (9CI) (CA INDEX NAME)



L63 ANSWER 13 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1985:45915 HCAPLUS
DN 102:45915
ED Entered STN: 09 Feb 1985
TI Chromone- and thiochromone-substituted 1,4-dihydropyridine lactones and their use in pharmaceuticals
IN Goldmann, Siegfried; Bossert, Friedrich; Schramm, Matthias; Thomas, Guenter; Gross, Rainer
PA Bayer A.-G. , Fed. Rep. Ger.
SO Ger. Offen., 15 pp.
CODEN: GWXXBX
DT Patent
LA German
IC C07D491-048; A61K031-44; A61K031-435
CC 28-2 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 1
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DE 3311003 | A1 | 19840927 | DE 1983-3311003 | 19830325 |
| | DK 8401449 | A | 19840926 | DK 1984-1449 | 19840229 |
| | DK 158950 | B | 19900806 | | |
| | DK 158950 | C | 19901231 | | |
| | EP 123095 | A2 | 19841031 | EP 1984-102659 | 19840312 |
| | EP 123095 | A3 | 19861203 | | |
| | EP 123095 | B1 | 19881026 | | |
| | R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE | | | | |
| | AT 38229 | E | 19881115 | AT 1984-102659 | 19840312 |
| | NO 8400950 | A | 19840926 | NO 1984-950 | 19840313 |
| | NO 160659 | B | 19890206 | | |
| | NO 160659 | C | 19890516 | | |
| | US 4555512 | A | 19851126 | US 1984-589614 | 19840314 |
| | ES 530800 | A1 | 19841101 | ES 1984-530800 | 19840321 |
| | FI 8401153 | A | 19840926 | FI 1984-1153 | 19840322 |
| | FI 81100 | B | 19900531 | | |
| | FI 81100 | C | 19900910 | | |
| | IL 71314 | A1 | 19881230 | IL 1984-71314 | 19840322 |
| | ZA 8402166 | A | 19841031 | ZA 1984-2166 | 19840323 |
| | HU 33808 | O | 19841228 | HU 1984-1175 | 19840323 |
| | HU 189849 | B | 19860828 | | |
| | CA 1211109 | A1 | 19860909 | CA 1984-450361 | 19840323 |
| | JP 59193887 | A2 | 19841102 | JP 1984-57202 | 19840324 |
| | JP 03016955 | B4 | 19910306 | | |
| | AU 8426099 | A1 | 19840927 | AU 1984-26099 | 19840326 |
| | AU 564838 | B2 | 19870827 | | |
| | ES 552277 | A1 | 19870901 | ES 1986-552277 | 19860221 |
| | ES 552278 | A1 | 19870901 | ES 1986-552278 | 19860221 |
| | ES 552279 | A1 | 19870901 | ES 1986-552279 | 19860221 |
| | ES 552280 | A1 | 19870901 | ES 1986-552280 | 19860221 |
| PRAI | DE 1983-3311003 | A | 19830325 | | |
| | EP 1984-102659 | A | 19840312 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---|---|---|
| DE 3311003 | IC | C07D491-048IC A61K031-44IC A61K031-435 |
| US 4555512 | NCL | 514/302.000; 514/232.500; 514/233.800; 514/234.500; 544/127.000; 546/115.000 |

OS CASREACT 102:45915

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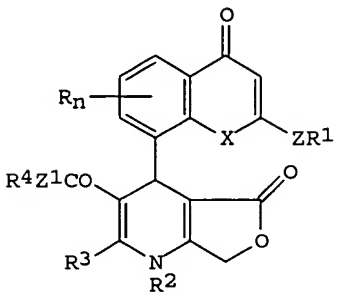


I

AB Cardiotonic and hypoglycemic (no data) title compds. [I; R = H, halo; R1 = aliphatic, alkoxycarbonyl, (un)substituted aromatic, heteroarom.; R2 = H, (un)substituted alkyl; R3 = H, (un)substituted alkyl, alkenyl, cycloalkyl, cycloalkenyl, optionally interrupted by O, S, SO2, R5N; R4 = (un)substituted straight- or branched-chain or cyclic hydrocarbon; R5 = H, alkyl; Z = bond, alkylene, alkenylene, optionally interrupted by O, S; Z1 = bond, O, S, R5N; n = 0-3] were prepared Thus, 4-oxo-2-phenyl-4H-thiochromene-8-carboxaldehyde was refluxed in EtOH with H2NCMe:CHCO2Et and ClCH2COCH2CO2Me to give I (R1 = Ph, R2 = H, R3 = Me, R4 = Et, Z = bond, Z1 = O, n = 0).

ST furopyridinecarboxylate benzopyranyl benzothiopyranyl; benzopyranone furopyridinyl; benzothiopyranone furopyridinyl; benzothiopyrancarboxaldehyde cyclocondensation acetoacetate aminocrotonate; cardiotonic furopyridinecarboxylate; hypoglycemic furopyridinecarboxylate

IT Heart
(contraction of, furopyridinecarboxylates effect on)

IT Antidiabetics and Hypoglycemics
(furopyridinecarboxylates)

IT Cyclocondensation reaction
(of acetoacetates with aminocrotonates and benzopyrancarboxaldehydes)

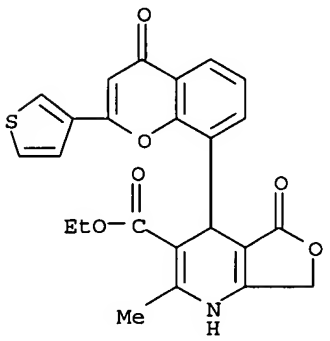
IT 87626-84-4 94127-29-4 94127-30-7 94127-34-1 94127-35-2
94127-36-3 94127-37-4 94127-38-5 94127-39-6 94127-71-6
94127-72-7 94127-74-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with acetylacetates and aminocrotonates)

IT 141-97-9 7318-00-5 14205-39-1 14205-41-5 14205-43-7 14205-46-0
24057-46-3 27618-18-4 39562-76-0 43107-11-5 50899-10-0
52937-87-8 53055-18-8 61312-61-6 77075-95-7 94127-31-8
94127-32-9 94127-33-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with acetylacetates and benzopyrancarboxaldehydes)

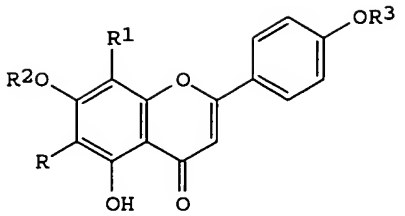
IT 32807-28-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with aminocrotonate and benzopyrancarboxaldehyde derivative)

IT 35594-15-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with aminocrotonates and benzopyrancarboxaldehydes)

IT 94127-73-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclocondensation of, with acetylacetates and benzopyrancarboxaldehydes)
IT 92089-08-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclocondensation of, with aminocrotonate)
IT 94127-42-1P 94127-43-2P 94127-44-3P 94127-45-4P 94127-46-5P
94127-47-6P 94127-48-7P 94127-49-8P 94127-50-1P 94127-51-2P
94127-52-3P 94127-53-4P 94127-54-5P 94127-55-6P 94127-56-7P
94127-57-8P 94127-58-9P 94127-59-0P 94127-60-3P 94127-61-4P
94127-62-5P 94127-63-6P 94127-64-7P 94127-65-8P 94127-66-9P
94127-67-0P 94127-68-1P 94127-69-2P **94127-70-5P**
94152-44-0P 96300-87-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT **94127-70-5P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 94127-70-5 HCAPLUS
CN Furo[3,4-b]pyridine-3-carboxylic acid, 1,4,5,7-tetrahydro-2-methyl-5-oxo-4-[4-oxo-2-(3-thienyl)-4H-1-benzopyran-8-yl]-, ethyl ester (9CI) (CA INDEX NAME)




L63 ANSWER 14 OF 14 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1984:68617 HCAPLUS
DN 100:68617
ED Entered STN: 12 May 1984
TI Sugar ring isomerization in C-arabinosylflavones
AU Besson, Elisabeth; Chopin, Jean
CS Lab. Chim. Biol., Univ. Claude Bernard Lyon I, Villeurbanne, 69622, Fr.
SO Phytochemistry (Elsevier) (1983), 22(9), 2051-6
CODEN: PYTCAS; ISSN: 0031-9422
DT Journal
LA English
CC 33-3 (Carbohydrates)
Section cross-reference(s): 26
GI




I

AB Acid isomerization of 6-C-α-L-arabinopyranosylacacetin, prepared by condensation reaction of acacetin with β-bromo-2,3,4-tri-O-acetyl-L-arabinopyranose, at 100° for 45 min gave the glycoacacetins I (R = β-L-arabinopyranosyl, β-L-arabinofuranosyl; R1 = R2 = H, R3 = Me) without any Wessely-Moser isomerization. Similar treatment of molludistin (I; R = R3 = H, R1 = α-L-arabinopyranosyl, R2 = Me) (II) gave a mixture of II and I (R = R3 = H, R1 = α-L-arabinopyranosyl, R2 = Me). This is the 1st report of sugar ring isomerization in C-glycosylflavones. The pyranosyl and furanosyl isomers were easily separated after permethylation.

ST isomerization molludistin arabinopyranosylacacetin; acacetin arabinopyranosyl isomerization; flavone arabinosyl isomerization; arabinosylflavone isomerization

IT Isomerization
(of sugar ring of arabinosylflavones)

IT 480-44-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(arabinofuranosylation and arabinopyranosylation of)

IT 14227-90-8 50730-31-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation reaction of, with acacetin)

IT 66274-25-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(isomerization of)

IT 88718-27-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and isomerization of)

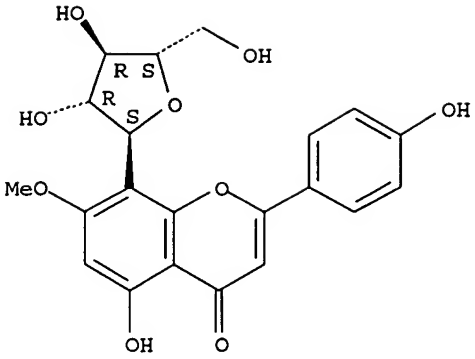
IT 88718-24-5P 88718-25-6P 88718-26-7P 88718-28-9P 88718-29-0P **88718-30-3P** 88729-53-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT **88718-30-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 88718-30-3 HCAPLUS

CN 4H-1-Benzopyran-4-one, 8-α-L-arabinofuranosyl-5-hydroxy-2-(4-hydroxyphenyl)-7-methoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

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CA INDEXING COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'USPAT2' ENTERED AT 16:02:11 ON 13 OCT 2005
CA INDEXING COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

=> d bib abs fhitstr hitrn l66 1

L66  ANSWER 1 OF 3  USPATFULL on STN
AN      2004:139405  USPATFULL
TI      Inhibitors of cyclin-dependent kinases and their use
IN      Lal, Bansi, Mumbai, INDIA
        Joshi, Kalpana, Thane, INDIA
        Kulkarni, Sanjeev, Mumbai, INDIA
        Mascarenhas, Malcolm, Mumbai, INDIA
        Kamble, Shrikant, Mumbai, INDIA
        Rathos, Maggie Joyce, Thane, INDIA
        Joshi, Rajendrakumar, Mumbai, INDIA
PI      US 2004106581       A1   20040603
AI      US 2003-611539      A1   20030701 (10)
PRAI    IN 2002-6162002      20020708
        US 2002-397326P      20020719 (60)
DT      Utility
FS      APPLICATION
LREP    FROMMER LAWRENCE & HAUG LLP, 745 Fifth Avenue, New York, NY, 10151
CLMN    Number of Claims: 23
ECL     Exemplary Claim: 1
DRWN    6 Drawing Page(s)
LN.CNT 5448
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB      The present invention relates to novel compounds for the inhibition of
        cyclin-dependent kinases, and more particularly, to chromenone
        derivatives of formula (Ia),   ##STR1##

        wherein R.sub.1, R.sub.2, R.sub.3, R.sub.4, R.sub.5, R.sub.6, R.sub.7
        and A have the meanings indicated in the claims. The invention also
        relates to processes for the preparation of the compounds of formula
        (Ia), to methods of inhibiting cyclin-dependent kinases and of
        inhibiting cell proliferation, to the use of the compounds of formula
        (Ia) in the treatment and prophylaxis of diseases, which can be treated
        or prevented by the inhibition of cyclin-dependent kinases such as
        cancer, to the use of the compounds of formula (Ia) in the preparation
        of medicaments to be applied in such diseases. The invention further
        relates to compositions containing a compound of formula (Ia) either
        alone or in combination with another active agent, in admixture or
        otherwise in association with an inert carrier, in particular
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pharmaceutical compositions containing a compound of formula (Ia) either alone or in combination with another active agent, together with pharmaceutically acceptable carrier substances and auxiliary substances.

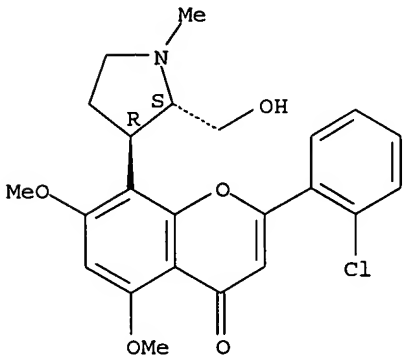
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 647019-53-2P
(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

RN 647019-53-2 USPATFULL

CN 4H-1-Benzopyran-4-one, 2-(2-chlorophenyl)-8-[(2R,3S)-2-(hydroxymethyl)-1-methyl-3-pyrrolidinyl]-5,7-dimethoxy-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.




IT 647019-53-2P 647019-54-3P 647019-55-4P
647019-56-5P 647019-57-6P 647019-58-7P
647019-59-8P 647019-60-1P 647019-61-2P
647019-62-3P 647019-63-4P 647019-64-5P
647019-65-6P 647019-66-7P 647019-67-8P
647019-68-9P 647019-69-0P 647019-70-3P
647019-71-4P 647019-72-5P 647019-73-6P
647019-74-7P 647019-75-8P 647019-76-9P
647019-77-0P 647019-78-1P 647019-79-2P
647019-81-6P 647019-82-7P 647019-84-9P
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647020-49-3P 647020-50-6P 647020-51-7P
647020-52-8P 647020-53-9P 647020-54-0P
647020-55-1P 647020-56-2P 647020-57-3P
647020-58-4P
(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

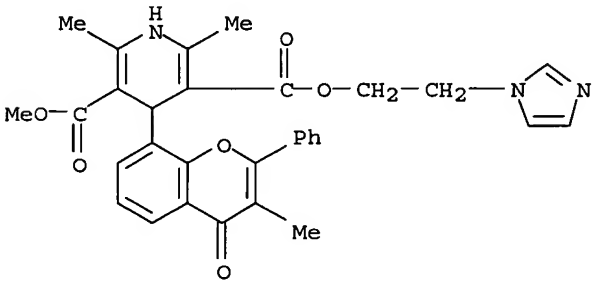
IT 647020-75-5P 647020-76-6P 647020-77-7P
647020-80-2P 647020-81-3P 647020-82-4P

**647020-89-1P**
(preparation of pyrrolidinylchromenones as inhibitors of cyclin-dependent kinases)

=> d bib abs hitstr l66 2-3

L66 ANSWER 2 OF 3 USPATFULL on STN
AN 89:12878 USPATFULL
TI Therapeutically active flavonyl-1,4-dihydrophyridines
IN Leonardi, Amedeo, Milan, Italy
Pennini, Renzo, Milan, Italy
Cazzulani, Pietro, Milan, Italy
Nardi, Dante, Milan, Italy
PA Recordati S.A., Chemical & Pharmaceutical Company, Chiasso, Switzerland (non-U.S. corporation)
PI US 4806534 19890221
AI US 1986-921397 19861022 (6)
PRAI IT 1985-22578 19851022
DT Utility
FS Granted
EXNAM Primary Examiner: Fan, Jane T.
LREP Burns, Doane, Swecker & Mathis
CLMN Number of Claims: 61
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 786
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The novel flavonyl-1,4-dihydropyridines having the general formula (I): ##STR1## are therapeutically effective calcium antagonists and smooth muscle relaxant.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT **110714-79-9P**
(preparation of, as calcium antagonist and smooth muscle relaxant)
RN 110714-79-9 USPATFULL
CN 3,5-Pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(3-methyl-4-oxo-2-phenyl-4H-1-benzopyran-8-yl)-, 2-(1H-imidazol-1-yl)ethyl methyl ester (9CI) (CA INDEX NAME)




L66 ANSWER 3 OF 3 USPATFULL on STN
AN 85:69647 USPATFULL
TI Circulation-active novel chromone- and thiochromone-substituted 1,4-dihydropyridine-lactones
IN Goldmann, Siegfried, Wuppertal, Germany, Federal Republic of
Bossert, Friedrich, Wuppertal, Germany, Federal Republic of
Schramm, Matthias, Cologne, Germany, Federal Republic of
Thomas, Gunter, Wuppertal, Germany, Federal Republic of
Gross, Rainer, Wuppertal, Germany, Federal Republic of
PA Bayer Aktiengesellschaft, Leverkusen, Germany, Federal Republic of (non-U.S. corporation)

PI US 4555512 19851126
AI US 1984-589614 19840314 (6)
PRAI DE 1983-3311003 19830325
DT Utility
FS Granted
EXNAM Primary Examiner: Michl, Paul R.; Assistant Examiner: Walker, Alex H.
LREP Sprung Horn Kramer & Woods
CLMN Number of Claims: 13
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 692
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Dihydropyridines of the formula ##STR1## in which R.sup.1, R.sup.2, R.sup.5 and R.sup.6 can be hydrogen or various halogen or organic radicals,

R.sup.4 is an optionally substituted hydrocarbon radical,

A is a direct bond, a C.sub.1 -C.sub.20 -alkylene chain or a C.sub.2 -C.sub.20 -alkenylene chain, which chains are optionally interrupted by O or S

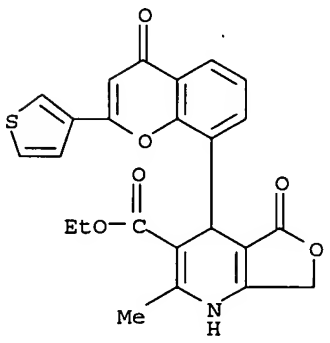
X is O or S, and

Y is a direct bond, O, S, --NH--or--N-alkyl with 1 to 8 C atoms

or a pharmaceutically acceptable salt,

are useful as cardiotonic agents for improving heart contractility, antihypotonic agents, for lowering the blood sugar level, for detumescing mucous membranes and for influencing the salt and/or liquid balance.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT **94127-70-5P**
(preparation of)
RN 94127-70-5 USPATFULL
CN Furo[3,4-b]pyridine-3-carboxylic acid, 1,4,5,7-tetrahydro-2-methyl-5-oxo-4-[4-oxo-2-(3-thienyl)-4H-1-benzopyran-8-yl]-, ethyl ester (9CI) (CA INDEX NAME)

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